

U.S.I. JOURNAL

INDIA'S OLDEST JOURNAL ON DEFENCE AFFAIRS

(Established 1870)



PRINCIPAL CONTENTS

- | | |
|--|----------------------------------|
| Japan and the Soviet Power | <i>Maharaj K. Chopra</i> |
| Academic Recognition of
Service Education | <i>Lieut Gen ML Thapan, PVSM</i> |
| The Scope and Application of
Human Factors Engineering
in the Defence Forces | <i>Dr (Mrs) Avtar Pennathur</i> |
| The Defence of Bombay High
Psychological Warfare | <i>Lieut Col VK Shrivastava</i> |
| "Colonel of The Regiment"
Indian Pattern | <i>Lieut Col V Uberoy</i> |
| The Defence Line Concept | <i>Ganpat</i> |
| Counter Attack Versus
Counter Offensive | <i>Major Yogi Saksena</i> |
| | <i>Lieut Col NK Mayne</i> |

JULY - SEPTEMBER 1980

ALL RIGHTS RESERVED © Rs. 10.00 PUBLISHED QUARTERLY

USI PUBLICATIONS

USI NATIONAL SECURITY PAPERS

China's Strategic Posture in the 1980's
by Lt Gen AM Vohra, PVSM (Retd) Price : Rs. 5.00

A New Battle Tank for India
by Brig RD Law (Retd) Price : Rs. 5.00

Combat Vehicle for the Mechanised Infantry
by Brig RD Law (Retd) Price : Rs. 7.50

Para Military Forces
by Lt Gen ML Chibber, PVSM, AVSM Price : Rs. 10.00

Defence Budgeting in India
by Shri DS Nakra (Retd) Price : Rs. 10.00

Possible Counter Measures against Satellite Reconnaissance
by Air Marshal IW Sabhaney, AVSM Price : Rs. 10.00

Higher Defence Organisation
by Lt Gen SK Sinha, PVSM Price : 10.00

USI SEMINARS

Report on Reorganisation of the Infantry Division
by Maj Gen D Som Dutt (Retd) Price : Rs. 3.50

Report on Armoured Personnel Carriers
by Maj Gen D Som Dutt (Retd) Price Rs. : 5.00

Retiring Age in the Armed Forces
by Brig NB Grant, AVSM (Retd) Price : Rs. 7.50

Report on the Imposition of a Manpower Ceiling on the Army
by Lt Gen ML Thapan, PVSM (Retd) Price : Rs. 5.00

Report on Recruitment into the Officer Corps of the Armed Forces
by Maj Gen D Som Dutt (Retd) Price : Rs. 5.00

Report on a Seminar on Cooperation in Defence
by Lt Gen ML Thapan, PVSM (Retd) Price : Rs. 5.00

Report on a Seminar on Review of the Organisational Pattern of the Indian Army
by Lt Gen ML Thapan, PVSM (Retd) Price : Rs. 10.00

USI NATIONAL SECURITY LECTURES

India's Problems of National Security in the Seventies
by General JN Chaudhuri Price : Rs. 10.00

India's Defence Policy and Organisation since Independence
by Shri P.V.R. Rao, ICS (Retd) Price : Rs. 25.00

Some Problems of India's Defence
by Air Chief Marshal PC Lal, DFC (Retd) Price : Rs. 25.00

Defence and Development
by Shri HC Sarin, ICS (Retd) Price : Rs. 25.00

USI JOURNAL CENTENARY NUMBER

Contains informative and authoritative articles
Price : Rs. 15.00

Ask for your copy from :

Secretary, United Service Institution of India
'Kashmir House', Rajaji Marg, New Delhi-110011.

The
Journal
of the
United Service Institution
of
India

Published by Authority of the Council



Established : 1870

Postal Address :
'KASHMIR HOUSE', RAJAJI MARG, NEW DELHI-110011
Telephone No. : 375828

Vol. CX

JULY-SEPTEMBER 1980

No. 461

USI Journal is published quarterly in April, July, October and January
Subscription : Rs. 40 per annum. Single Copy : Rs. 10. Foreign (Sea Mail)
\$ 4.00 or £ 1.25. Subscription should be sent to the Secretary. It is
supplied free to members of the Institution. Articles, Correspondence
and Books for Review should be sent to the Editor. Advertisement
enquiries concerning space should be sent to the Secretary.

**SERVICE
INSTITUTION
OF INDIA**

for

*the furtherance of
interest and know-
ledge in the art,
science and litera-
ture of the Defence
Services*

The President of India

Vice-Patrons

Governor of Andhra Pradesh

Governor of Assam, Manipur, Meghalaya,
of Nagaland and of Tripura

Governor of Bihar

Governor of Gujarat

Governor of Haryana

Governor of Himachal Pradesh

Governor of Jammu & Kashmir

Governor of Karnataka

Governor of Kerala

Governor of Madhya Pradesh

Governor of Maharashtra

Governor of Orissa

Governor of Punjab

Governor of Rajasthan

Governor of Sikkim

Governor of Tamil Nadu

Governor of Uttar Pradesh

Governor of West Bengal

Lt Governor of Arunachal Pradesh

Lt Governor of Delhi

Lt Governor of Goa, Daman and Diu

Lt Governor of Mizoram

Lt Governor of Pondicherry

Minister of Defence

General OP Malhotra, PVSM, Chief of the Army Staff

Admiral RL Pereira, PVSM, AVSM, Chief of the Naval
Staff

Air Chief Marshal IH Latif, PVSM, Chief of the Air Staff

President

Air Marshal LS Grewal PVSM, AVSM, Vr C, Vice Chief
of the Air Staff

Vice-Presidents

Lt Gen AM Sethna, AVSM, Vice Chief of the Army Staff
Vice Admiral MR Schunker, AVSM, Vice Chief of the
Naval Staff

Elected Members of the Council

Brig RK Anand

Maj. Gen KS Bajwa

Lt Col GL Bakshi

Maj Gen BM Bhattacharjee, PVSM, MVC (Retd.)

Lt Gen IS Gill, PVSM, MC (Retd.)

Brig NB Grant, AVSM (Retd.)

Lt Gen Harbaksh Singh, Vr C (Retd.)

Lt Gen KV Krishna Rao, PVSM

Wing Comdr A Mazumdar (Retd.)

Brig Raj Singh, MVC, VSM

Vice Admiral MK Roy, AVSM

Maj Gen SC Sinha

Representative Members

Lt Gen SS Brar, *Director General Military Training*

Captain N Guha, IN, *Director of Naval Training*

Air Cdre PD Dogra *Director of Training, Air HQ*

Ex-Officio Members

Shri KPA Menon, *Secretary, Ministry of Defence*

Lt Gen WAG Pinto, PVSM, *Commandant, National Defence
College*

Major General Mohinder Singh, AVSM, *Commandant Defence
Services Staff College*

Shri C Vasudevan, *Financial Adviser, Ministry of Defence
Executive Committee*

Lt Gen SS Brar, *Director General Military Training*

Shri KA Nambiar, JS (G), *Ministry of Defence*

Captain N Guha, IN, *Director of Naval Training*

Air Cdre PD Dogra, *Director of Training, Air HQ*

Lt Gen Harbaksh Singh, Vr C (Retd.)

Shri OP Kohli, DFA (AG)

Secretary and Editor

Colonel Pyara Lal

AVSM

CONTENTS

JULY-SEPTEMBER 1980

JAPAN AND THE SOVIET POWER	Maharaj K. Chopra	205
ACADEMIC RECOGNITION OF SERVICE EDUCATION	Lieut Gen ML Thapan, PVSM	220 (16)
THE SCOPE AND APPLICATION OF HUMAN FACTORS ENGINEERING IN THE DEFENCE FORCES	Dr (Mrs) Avtar Pennathur	225(21)
THE DEFENCE OF BOMBAY HIGH PSYCHOLOGICAL WARFARE	Licut Col VK Shrivastava	233 (29)
"COLONEL OF THE REGIMENT" INDIAN PATTERN	Licut Col V Uberoy	238 (34)
HOW ARMY FOSTERS INTERNAL COHESIVENESS AND NATIONAL INTEGRATION	Ganpat	244
THE DEFENCE LINE CONCEPT	Major KK Dogra, PSC,	
COUNTER ATTACK VERSUS COUNTER OFFENSIVE	MTE, BSC (ENGG) (ELECT)	252
DISAPPEARING PROFESSIONS IN INDIA	Major Yogi Saksena	260
NO SOFT OPTIONS : THE POLITICO- MILITARY REALITIES OF NATO (Review Article)	Licut Col NK Mayne	271
BOOK REVIEWS	PC Roy Chaudhury	277
The Military Balance 1979-80; Diplomats : The Foreign Office Today (<i>Geoffrey Moorhouse</i>) ; Sphinx and Commissar : The Rise and Fall of Soviet Influence in the Arab World (<i>Mohamed Heikal</i>); The Art of Warfare in the Age of Napoleon (<i>Gunther E. Rothenberg</i>); Korean Phoenix—A Nation from the Ashes (<i>Michael Keon</i>); Himalayan Traders : Life in Highland Nepal (<i>Christoph Von Furer</i>); Inchon : Macarthur's Last Triumph (<i>Michael Langley</i>); Dunkirk : Anatomy of Disaster (<i>Patrick Turnbull</i>); The Battle of Trafalgar (<i>Geoffrey Bennett</i>)	Col R Rama Rao (Retd)	279
SECRETARY'S NOTES		284
ADDITIONS TO THE USI LIBRARY		300
		301

—○—

NOTE

The views expressed in this Journal are in no sense official and the opinions of contributors in their published articles are not necessarily those of the Council of Institution

**JOIN
THE USI
CORRESPONDENCE COURSES
AND
PLAN YOUR CAREER**

Courses Run by the USI

<i>Course</i>	<i>Date of commencement of the course</i>
* DSSC Entrance Examination held in Nov every year)	31 Mar
* Technical Staff College Course (TSC) Entrance Examination held in Oct every year	1 Apr
* Part 'D' Promotion Examination to be held in Feb every year	15 Jun
* Part 'B' Promotion Examination to be held in Jul every year	1 Feb
* DSSC Air Force Entrance Examina- tion (held in Feb every year)	20 Jun

Tuition Fee

Tuition fee in respect of each course is as follows :—

<i>Course</i>	<i>For all Subjects</i>	<i>For each Subject</i>
DSSC (Army) (six subjects)	Rs 400/-	Rs 80/-
TSC (Army) (one subject)		Rs 100/-
Part 'D' (Army) (five subjects)	Rs 280/-	Rs 70/-
Part 'B' (Army) (four subjects)	Rs 240/-	Rs 70/-
DSSC Air Force (three subjects)	Rs 240/-	Rs 80/-

*For further details please write to the
Director of Studies :*

**United Service Institution of India (USI),
Kashmir House, Rajaji Marg, NEW DELHI-110011.**

Japan and the Soviet Power

MAHARAJ K. CHOPRA

I. BEGINNING OF THE CHILL

IF "Normalisation" means correct and full-fledged relations between two countries, then no such happy state has existed between Japan and the Soviet Union ever since World War II. Peace treaty, which should formally end the state of war between them, has not been signed yet. It is true that despite this fact Moscow and Tokyo have developed a great variety of links, politically, economically and diplomatically. But there has always been lurking a thorn in the thigh, perpetuating misgivings and introducing uncertainties about the future. Meanwhile potshots of propaganda have been exchanged, indicating that while the relations might improve, they might also worsen. And they have worsened. Japan and the Soviet Union are quite obviously in two different camps.

This is all too visible since 1978 when Japan signed peace treaty with China and China normalised relations with the United States. That added fuel to the Soviet fire, and if there was any chance of complete rapprochement, that ended for the time being. Moscow and Tokyo have since then been readjusting their postures, in particular Tokyo, the inferior party. And of course this is a matter not only between them but also of significance for much wider power structures, especially now that the two super powers are seriously in confrontation after Afghanistan.

II. EXPANSION AND COLLISION

HISTORICAL FACTOR

A development such as this might have been expected if history and geography are any guide. Expansionism and collision are a dominant feature of Russo-Japanese recent past. Both Russians and Japanese have been empire-builders, the difference being that while the Russian empire has survived, the Japanese has crumbled. In this long-drawn

process the two peoples have been engaged in bloody conflicts, which have not been forgotten.

The story of Russia's territorial explosion is well-known, from a mere 3 million sq.km in the sixteenth century Russia is now 23 million sq. km. Most of this addition has come from Asia. Siberia was conquered, after which a double-pronged drive led to North Pacific coast right upto Alaska (later sold to the USA), and, southward, to Far East including the Amur region where Vladivostok was founded. So far as Siberia was concerned the conquest was smooth, but in the Far East opposition came both from China and Japan. China succumbed and was loaded with "unequal treaties".

Japan's challenge was vigorous but late in the coming—only towards the end of the nineteenth century. There were three landmarks. First, the Russo-Japanese war of 1904-05, when the Russians were defeated on the mainland as well as the sea. That laid the foundation of the Japanese empire which subsequently included Formosa, Korea and Manchuria. Secondly, the Russo-Japanese war for Mongolia in 1939 when the Japanese armies were defeated at the Halhyn Gol River. The Japanese advance was stemmed and the Russian could now concentrate on the western front—with profound significance for the war in Europe. And finally, the defeat of Japan in 1945, when Stalin made a bid to occupy Japan's northernmost island, Hokkaido. But Americans thwarted the attempt, although Russians succeeded in occupying the islands opposite in the Kurile chain.

It is sometime asked why Japan has concluded a peace treaty with China and not with the Soviet Union. Part of the answer lies in history—in the case of China it committed aggression but in the case of Russia it received aggression. And history is still working in the new strategic environment : Japan is at the receiving end as before.

GEOGRAPHICAL FACTOR

Japan has been cut to size, and yet its fundamental geopolitical relevance is still crucial. It constitutes the largest island group off the Asian mainland inhabited by a virile, proud and highly advanced people numbering 120 million. The Japanese might have lost a political empire but have built an economic empire. The Sea of Japan continues to be a viable cushion against any thrust from the mainland, even in these days of mighty naval and air power. Because of the proximity of Japan to the mainland, the Japanese will always be interested in what happens

there, hence the concern over developments in South Korea. For the same reason, Japan can always be the base of assault upon the mainland. It is a barrier to any exit from Asia into the Pacific and is a nodal point of sea communications in the ocean. For an imperial power such as the Soviet Union, it is important that the sons of Nippon are kept at bay, immobilised and even conquered.

III. THE SOVIET CARROT AND STICK

Two major aspects of Japan's post-war posture have been alliance with the United States, which is antagonistic to the Soviet Union, and the economic miracle, from which the Russians can reap advantage. Moscow has thus been adopting attitudes of the carrot and the stick. The mid-1978 marks a sharp dividing line in that attitude, when Japan signed a peace treaty with China.

THE FRIENDLY MOSCOW

Till then Moscow was polite, harping on good neighbourliness and cooperation. In an article published in its monthly *International affairs*, February 1978, it recorded how Soviet-Japanese trade had increased 70-fold in 20 years, standing now at \$ 2500 million and how under the Five-Year Agreement this was to rise to \$ 12,000 million; and, further, how the two countries had cooperated in the mining of coking coal in Yakutia, building ports in the Pacific, and the prospecting of gas and oil off Sakhalin. A fishing agreement was quoted as another evidence of mutual accommodation. As for the proposed peace treaty with China, Japan was advised to beware and not hurt Soviet interests with "hegemony" clauses and so on; and as to the islands captured by Russia during the war, that was a "non-event", an irreversible reality.

THE UNFRIENDLY MOSCOW

But hardly had the ink on the peace treaty with China been dry, when the Soviets pulled out the iron hand in velvety glove. Under the heading "Japan Faces the 1980s", the January 1980 issue of *International Affairs* listed a whole series of negatives leading the Japanese to the rocks of disaster. Japan since 1973, it said, when the oil war began, had been engulfed in an unprecedented crisis and its economic miracle lay in ruins. The Big Business was desperately trying to rehabilitate itself by creating "zones of bondage" in Southeast Asia and elsewhere. Banks

had broken up and bankruptcies were common. Contrary to constitutional restraints there was a movement to remilitarise Japan, and "ravangists" were raising an anti-Soviet bogey.

Then, Japan was said to be expanding its strategic role. It was seeking close links with West Europe and NATO, and was conspiring with the United States to further its global ambitions. The treaty with China was yet another nail in the coffin of Russo-Japanese relations. And so Japan, a good, cooperative, valuable neighbour till yesterday had become hypocritical and aggressive and had nothing right about it, politically, economically or strategically.

The Japanese have not failed to take note of the obverse side of the Soviet coin. An entire picture of the bear galloping to the east changes, mindful of how since World War II—even thanks to World War II—the Soviets have been pushing towards their own neighbourhood. The construction of the Second Trans-Siberian Line along with roadways and river routes and pipelines are among the latest measures to improve the infra-structure of the Far East. Old ports have been expanded and new ones have come up. Russia's eastern arsenals now contain more prolific and more powerful weapons equipping larger combat forces. These might have been primarily meant for China but also could be turned on Japan. The Soviet East, once an appendage of the Soviet West, has now become a power centre in its own right. The population of the region is increasing, entailing growingly big Soviet stakes; and if the Kuriles is an indication, there are more Russians at Japan's door-step now than ever before.

IV. JAPAN'S WHITE PAPERS ON DEFENCE

How the Japanese mood has changed from the earlier complacency to present apprehensions is discerned in the White Papers on Defence issued during 1976-1980. These documents, made public every year, contain assessment of the international situation, outlines of defence policy, and issues involving construction of the armed forces. It is clear that the year 1978 draws a dividing line in the Japanese perceptions of the Soviet moves.

Take first 1976-77.

- (i) The United States and the Soviet Union will continue to avoid war with nuclear weapons as well as conventional arms and will not be engaged in total involvement.

(ii) The Soviet Union will continue to be occupied with European problems such as NATO confrontation and control of Eastern Europe.

(iii) There is little possibility of Sino-Soviet confrontation being resolved, although relations may be partially improved.

(i) The situation in the Korean peninsula will remain as it is, there being no major conflict.

Thus the threat from the Soviets is remote, and so softened does the Kremlin's attitude look that even a rapport between Beijing and Moscow is considered on the cards.

And now take 1978-80. The White Paper talks about the global as well as the regional scenario—

Global

(i) Even though SALT II might lead to SALT III—a presumption falsified by subsequent events—and the super powers might avoid nuclear war, positive actions by China in international affairs has rendered the climate complicated.

(ii) While the USA might have a power advantage overall, the Soviet Union is continuing to reinforce its military power, has increased defence budgets, and actually gained predominance in quality as far as the ground forces are concerned.

(iii) Not only has the quality of the Soviet nuclear weapons increased but also a remarkable improvement in accuracy has taken place.

(iv) The USSR has expanded its naval presence into oceans worldwide and also its capability to transport military forces to distant places.

(v) There are signs of instability not only in the Middle East, so important for Japan and the West, but also in several other parts of the world. The USSR is causing difficulties in the US sea routes.

(vi) There is no possibility of reconciliation between China and Russia in the near future.

(vii) The motives of the Soviet Union behind the enhancement of military measures appear to be an intention to expand political influence by use of military power.

Regional

(i) Japan—China Treaty of Peace and Friendship, normalisation of relationship between China and the United States, termination of treaties between USA and Taiwan and between China and the USSR, the Sino-Soviet war, and the cooperation treaty between the USSR and Vietnam have all introduced new factors.

(ii) The USSR is constantly strengthening its forces. From Europe have come "Minsk" aircraft carrier, "Petropavlovsk" guided missile cruiser, and "Ivan Rogov", an amphibious assault transport dock.

(iii) The Soviet Union has deployed considerable ground forces and constructed military bases on the two captured islands off Hokkaido.

(iv) The intention of the Soviet Union appears to be to browbeat Japan close to its homeland.

(v) The Soviet Union has acquired access to the permanent use of airports, harbours and other facilities in Indo-China and that poses threat to the sea lane through the South China Sea which carries vast quantities of Japanese trade.

(vi) In the Korean peninsula, which is important from the viewpoint of Japanese security and stability in the region, arms build-up has been accelerated. Therefore the USA must carry out the planned withdrawal of its forces with care.

(vii) With the abrogation of US-Taiwan Security Treaty, this particular sector is liable to be exposed to threats, hence the USA must institute alternative measures in the interests of safety.

Further Deterioration. Since the 1979-80 defence documents was published, the situation worldwide as well as regionally has worsened. SALT II has gone into deep freeze, and because of the consequent nuclear race among the super powers Japanese need for a nuclear umbrella has become all the more necessary. Tokyo has generally followed the lead of Washington in respect of Afghanistan and the Middle East. Demand for withdrawal of Soviet troops from Afghanistan has meant further confrontation with the Soviets, while sanctions against Iran have cut down an important oil source. Meanwhile the Indian ocean now contains the largest ever concentration of warships. Nearer home, Vietnam has virtually occupied Indo-China with Soviet backing, whose personnel are entrenched in Kampuchea and Laos, not to say in Vietnam itself. The South China Sea is infested with war vessels and even a minor conflagration could jeopardise the vital sea passage.

V. IMPACT ON US-JAPAN SECURITY RELATIONS

Inevitably enough, Japan has been profoundly affected by the kaleidoscopic transformation of the strategic environment. The Soviet Union appears prominently enough in its calculations, but there are other factors also which have to be taken into account. Among them the most important are Japan's alliance with the United States, relations with China, and the quality and quantity of armed forces.

JAPAN-US SECURITY ARRANGEMENTS

It is a truism that the Japan-US Security Treaty is the cornerstone of Japanese defence. It provides nuclear umbrella, guarantees against aggression, and protects Japan's far-flung interests for which the Japanese have no means of their own whatever. As a surety of support the US maintains troops on the Japanese soil where it has been provided with bases; and Tokyo meets part of their expenses. A consultative committee to coordinate policies has been established and common exercises are held now and again. Observers suggest that the Japanese forces are in fact integrated into America's military power, and their strength, composition and role have been geared accordingly. Every responsible Japanese statesman and every published defence appreciation affirms the US-Japan linkage; and on their part American officials say Japan is the most important ally of the United States and is of decisive importance.

And yet, ironically enough the US credibility is on the decline. These exchanges of absolute mutual trust and reliance are alright, but there are accumulating numerous flies in the ointment. My own latest visit to Japan has revealed a marked change in Japan's thinking, arising from the strategic situation as well as a quest for an appropriate national identity, not to say cultural differentiation.

In Japan a fresh appreciation is under way about America's intentions and capabilities. To some extent perhaps the US retreat from Asia after the Vietnam's debacle was retrieved consequent on the reassurances given by President Nixon under the "Nixon Doctrine" and by President Carter who sent several high-level missions to East Asia. And yet this was partly undone by Carter's decision to pull troops out of South Korea, casting doubts in the Japanese circles that next a similar pull-out may also happen in respect of the America forces stationed in Japan. I found that this impression refuses to die, even after Carter has reversed his decision. The question asked is: are American troops serving only American interests, and with what priority?

Indeed the American power as a whole has come under heavy cloud. The United States has been able to do very little over Afghanistan and its virtual expulsion from the Middle East has entailed eclipse of influence and loss of allies. Even the much vaunted Israel-Egyptian Treaty has not brought the dividends expected. While the US has lost several bases and vantage points in the Middle East, the Soviets have made some significant successes in this connection. And what would

one say about the fiasco of military operations for the release of hostages in Iran? Would one draw the conclusion that even a purely technical and tactical capability of the United States in the combat field is not what is generally claimed?

Further, the United States has ceased to enjoy unchallenged supremacy in all regions outside East Europe: it could deter clearly aggressive or sharply provocative posture in the Pacific, but it is far from certain as to how far it would go in comparatively limited local situation of threat which poses no particular damage to the security perceptions of the United States. Japan is seriously concerned with the reduction of America's options.

To this picture a national/cultural tinge is added. Deep down in the Japanese mind is the belief that when the chips are down it will be "Europe First" and then Japan. Unfortunately for the United States even the Europeans are not siding whole hog with Americans. There have been deep differences over the release of hostages, sanctions against Iran, strategy in the Persian Gulf and the Indian Ocean, and even in respect of force reduction in Europe and deployment of nuclear weapons. There is something in the Soviet refrain that "NATO is in disarray."

It appears that some kind of a dent has been created in the US-Japanese relations, although few people are prepared to admit it. A veiled confirmation of this is available in the next two areas of our discussion, relationship with China and defence build-up.

VI. SINO-JAPANESE ALLIANCE IN THE MAKING GROWING LINKS

There are two most important developments in the Sino-Japanese relationship, apart from the peace treaty. One occurred in 1978 when the "Japan-China Long-Term Trade Agreement" was signed. This is for eight years. During the first five years there will be a swap of \$20,000 million worth of trade, China supplying mostly oil and coal for Japanese manufactures, steel and technology. More agreements have been signed since, covering an increasing number of products. This has economic as well as strategic significance.

Economically, both parties are set on mutually beneficial ties, China to boost its modernisation and Japan to boost its rather faltering economy. Japan has gone even out of its way to help. For instance, it has accepted Chinese oil (15 million tons by 1985) even though it

has larger sulphur content needing expensive renovation of refining machinery; and in violation of EEC's Overseas Economic Cooperation Fund, in which Japan participates, it has embarked on a low-interest foreign aid programme to China.

Strategically, it seems like crossing the Rubicon—Japan having decided that it is in the Chinese and not in the Soviet kitty that it must put its chips. Moscow has been galled. Japan now would concentrate on the mainland, not only because it is a new unexploited field but also because of a dwindling sense of security in regard to the more distant oversea channels for which it must rely solely on the United States, a rather faltering ally.

AN ASIAN ALTERNATIVE

Another development may be linked with the visit of China's Chairman and Prime Minister Hua Gufeng to Japan in May 1980, the first of a Chinese head of state in 2000 years. Mr Hua openly advocated what was tantamount to an alliance, and the Japanese Government seemed to give assent. Analysts observe that both China and Japan realise that neither can be particularly effective against the mounting pressure of the Soviet Union, but together they could provide a real countervailing force. Interestingly enough, the implication of this move is that both China and Japan are out to develop an Asian alternative to the US supported counter-Soviet deterrence. This can cut both ways, so far as Washington is concerned. It might relieve Washington of its preponderant load of looking after Asian security. But by that token it might reduce dependence of China-Japan on the United States and lessen Washington's leverage in Asian affairs. Thus much will depend upon what policy the next US administration and legislature adopt after the election in November 1980.

VII. FRAGILITY OF JAPAN'S OWN DEFENCE

Coming to the third factor, we must have a bird's eyview of Japan's own military power. Japan's armed forces comprise 250,000 men, 760 tanks, 70 warships including 15 submarines, and 400 combat planes. They are tough, well trained, efficient and loyal, sustained by a defence budget of \$ 12 billion.

If these figures are viewed against the background of the total eclipse of Japan's military power at World War II, they might look good enough; after all the Japanese started from the scratch and have met

immense hurdles in the way of military reconstruction. But if viewed in terms of military power, the forces make little impressive showing and are far from adequate. In size they are small, just about one-half of South Korea, Taiwan or Vietnam, countries which fall way behind in resources. The army has only one formation of armour of brigade size; and the tanks are all of the medium class, which again are of old vintage. The air force carries on with the antiquated F-86 and F-104, outrageously old and all but discarded even in such countries as Pakistan; besides the aircraft are basically fighters or interceptors; and Japan has had no bomber. The submarine fleet looks good but has limited range; Japan has no cruiser.

It is often stated that Japan has built up a "self-defence force." Whether it is even just that is debatable; maybe in the earlier environment it could be regarded as presentable. But now that the West Pacific and the fringe of Asian mainland bristle with the latest in the armouries of the nations, their value is downgraded outright. Soviet warships and aircraft openly enter the Japanese waters and air space, and the Japanese can do nothing except report. Even the system of vigilance is not adequate, as demonstrated by the landing of a Soviet plane on one of Japan's airfield undetected; the only redeeming feature of this was it did so in error.

The question has arisen not only that the Japanese forces are but an appendage of the American forces—a point that hurts the Japanese more and more—but whether even as that appendage they are up to the task. Most Japanese I recently met, including those in defence research institutions and those in official positions, seem to feel that they are not.

DEFENCE ISSUES

A fresh approach to the defence of the country is under way, and the issues round which it hinges may be indicated as follows :

- (a) At the heart of all discussion is the Japanese constitution. Article 9 makes Japan renounce war as "right of the nation", forbids maintenance of armed forces and other war potentials, and obliterates the right of belligerency. The fact that a Japanese court ruled that the Japanese armed forces were illegally constituted shows how literally sometimes the constitution is interpreted. In actual fact of course the Japanese have come a long way off the provision of military *hara kiri*, so much so that some even suggest the constitution, a product of the

genius of General MacArthur, be revised and Article 9 expunged. Few statesmen seem to be ready for it yet, but ways and means of circumventing it as best as possible are under way.

(b) Most important in this respect is the development of a national consensus. There was a time when the man in uniform was pelted with stones in the street. Now he is respectable, although I found that few Japanese youth are particularly fond of a military career, so that even if the government wishes to enhance the strength of the armed forces, it is not likely to be smooth sailing. Public opinion has been subjected to careful defence education—"indoctrination", the Soviets say—and the recent campaign to highlight Russian threat has mellowed even the hard-line communist party. Most people realise that it is in national interest to reconstruct military power in all aspects. That realisation is bound to prevail in the coming years, no matter what sort of government is at the helm.

Meanwhile a number of official as well as non-official agencies have come into being in order to debate the entire issue afresh and in depth. Among them is the Japan Security Research Centre, which said recently that Japan must now rethink seriously its defence posture because the military balance in north-east Asia "where the US enjoyed predominance has completely collapsed". There is another body, The Institute for Peace and Security Research, officially sponsored, which discusses general themes as well as specific problems such as the size of the defence budget.

(c) Defence budget is a hot subject in Japan. It is well known that over the years it has been going up—for instance from \$ 9 to \$ 12 billion during the last three years. But it has remained what seems to have become a mythical formula, below one per cent of the gross national product. This, for a country with G.N.P. as high as \$ 700 billion (1978-79) is blatantly low, so that Americans often say Japan is having a "free ride" in defence. The Japanese resent this of course, and one of them even told me that the American interest in upgrading his country's defence budget is simply to get more money for the forces stationed in Japan. But the official line, at least openly, is that the self-imposed restriction owes a great deal to international public opinion—particularly Asian countries, who would charge the Nippon for having embarked on yet another venture of the "Co-Prosperity Sphere" of the pre-War days. But again it is precisely this charge of the "free ride" which bolsters the growing forces pushing for an enlarged defence budget. These forces are of a national character bearing, among other things, the impact of Soviet manoeuvres in East Asia, Afghanistan, Ethiopia, South Yemen and elsewhere. But there are external forces as well : besides the USA, China too has begun to goad Japan in the direction of further rearmament. The larger industrial houses of Japan, whose capacity and talent for defence production is not

fully utilised at present, would be only too willing to contribute their mite to augment defence effort.

(d) A most important point here is related to the system of weapons to be adopted. This in turn is linked with strategy—whether the strategy is to remain purely defensive as at present or whether it may be switched over to the offensive potential. But again the constitution buts in, so that there are wheels within wheels. A characteristic example of what transpires may be given.

Some years ago the government acquired F-4 aircraft. Immediately there was a hue and cry that it was an attack weapon. The Soviets were the first to join the chorus; and at last the government had to affirm that the "offensive" capacity of the aircraft was being removed. Now that it has been decided to acquire F-15s, a similar protest has surfaced. Truly speaking, this is a strike aircraft which, in addition to its unique avionics and top speed of Mach 2.5, has a bomb delivery capacity of 15,000 lb, a maximum range of 2,500 miles, and a combat radius of 700 miles. The communists in Japan have been quick to point out that it was designed to take on targets in the Soviet Far East. If now the government wants to show it as "defence only" weapon, it must get rid of some of its features, such as the bomb rack; and in fact an official has even said that with the Japan's air force the main purpose of the aircraft would be to "look down" for a low-flying invading plane. If that is really so, the aircraft would not remain F-15. That shows up one aspect of Japan's psychological reaction to enhancement of defence. Even after this sort of psychosis is overcome, it would be quite sometime before Japan's armed forces develop teeth.

WILL JAPAN GO NUCLEAR

I found in Japan that the issue of new weapons is being more and more closely linked to nuclear arms. Till the other day Japan swore resolutely about the three principles—not to possess nuclear weapons, not to build nuclear weapons, and not to acquire nuclear weapons. Having subscribed to the Nuclear Non-Proliferation Treaty, the Japanese were expected to say this. But as far back as 1978 a profound departure from this was noticed, when Japan's Prime Minister declared that if "tactical nuclear weapons" were of a defensive nature, Japan could have them. And since then it has been explained officially that "if in the future we should cease to be a signatory to the Non-Proliferation Treaty we can own nuclear weapons within the constitutional limits,"

This assertion has a positive backing, inasmuch as Japan now has a most ambitious nuclear programme, biggest in Asia next to China. It is aimed to cater for one-fourth of Japan's energy requirement during 1980s. A large amount of nuclear waste is produced. At the moment Japan sends this for processing to the United Kingdom, but its own arrangements are under way, and it is a question of time before the processing can be done indigenously. Thus, Japan is well advanced on the road towards the acquisition of plutonium, which goes to the making of an atom bomb.

But even more significant is Japanese effort to set up a plant to enrich uranium. This at last has happened through years of trial by the Power Reactor and Nuclear Fuel Development Corporation of Japan. A pilot plant, employing centrifuge process, with 1,000 centrifuges, started operating last year. The initial enrichment is only 3%, which is needed in light water reactors, but the number of centrifuges is going up, and here again it would be quite possible to carry forward the technique to production of over 90% rich uranium, the type needed for a nuclear device. Japan is well placed at the nuclear threshold.

Nuclear Non-Proliferation Treaty can be abrogated at a few month's notice if national security demands; and, in any case, one may recall that it was after protracted debate and hesitations that Japan did sign in the first instance. Such a possibility cannot be ruled out, if the chips are down.

VIII. JAPAN MOVES RIGHT

Some time back the *Asahi Shimbun*, Japan's foremost paper with world's largest circulation (12 million), said that Japan now stands at "the most important fork in the road since World War II." Most analysts would agree with this, and would add that this critical juncture has not been reached overnight, rather it is the consequence of several forces at work over considerable time. As it happens in such cases, there is almost always some catalyst to churn, and in the present case this has been the Soviet Union, although not the only one.

The central issue involved is both of national and international character. Japan has been reconstructing itself for over three decades after the ruination caused by the World War. While economically it has become a giant, politically it has remained a featherweight. The gross imbalance between economic and political wings might have been necessary in the past, but has ceased to be commensurate with realities of today : politics and economics cannot be kept apart indefinitely.

The most vital aspect of politics is security, and this is precisely which has now come under focus. Going to the roots, the Japanese are questioning the validity of constitutional restraints on defence, debating the related policies, re-examining strategy, scanning the defence budget, and giving a fresh look to the armed forces. On the whole the Japanese are averse to militarisation, and some oppose it resolutely with no holds barred. But now a situation has arisen which has created a reasonable national consensus in this respect. It is thought that the restraints are too perverse, that a defensive strategy must also include an element of the offensive, that more resources for defence should be provided, and that there should be more and better arms. *Asahi Shinbum* has called this a "turn to the right", which is only a political language for the enhancement of military power.

Regionally, Japan's worries about Korea, with which it has always linked its security and which remains a flashpoint of north-east Asia, have increased, thanks to the unending instability in the area. Indo-China has been a flame, and here a new power posture of the communist brand has arisen. North and South China Seas have been rather badly exposed after the termination of US-Taiwan Security Treaty. Almost in every one of these spheres, while the Western power has declined, the Soviets have made gains.

The regional scenario has now been impregnated with Chinese power. The precise implications of this are hazy at the moment, but one thing is clear that it has brought the Sino-Soviet conflict from the mainland to the sea right in the environment of Japan. Japan must readjust.

This brings up the entire question of the fabric of Japan's security. The US-Japan Security Treaty is intact to all appearance but its effectiveness has been affected by America's domestic compulsions, fluctuations in foreign policy, emergence of new priorities, dilution of thrust in several key sectors of the world, and above all by the more rapid pace of the advancement of Soviet power. There is no question of Japan severing connection with the United States; one-third of its trade, entire weaponry for the armed forces, protection of distant interests, nuclear umbrella, and atomic power programme so urgent for Japan's energy requirements depend upon the United States. But Japan is compelled to look for the security gaps to be plugged, now that power balance is shaken.

It is sometimes said that in the West Pacific there is "three-and-half" power balance, Japan being one half beside the US, USSR and China. This hurts Japan. Japan's Research Security Centre notes that within a decade the country's GNP would exceed that of the Soviet Union, and a power system that ignores this is faulty: Japan should become a "star player in the task of establishing a new order in the Asia and Pacific area". Thus, just as Japan is striving for an autonomous character of national defence, it is looking for an equal status in the regional balance at least. This has become compulsive now that Tokyo-Beijing links have been confirmed, which might amount to an alliance in reality if not in name. Here is in the making an Asian alternative to the Soviet challenge, and the Japanese would like that they do not play a second fiddle to the Chinese.

The Japanese are conservative people, and likely to proceed slowly in reconstructing their political and military status, unless there is a flare-up in a sensitive spot such as Korea. Therefore even in regard to the Soviet Union they are cautious and do not make any show of confrontation. But in the course adopted, in response to national sentiment and realities and changed environment, the Soviet Union will figure prominently in all their security perceptions.

Academic Recognition of Service Education

LIEUT, GENERAL M L THAPAN, PVSM

ALCOLM Muggeridge, a former editor of "Punch", once observed, no doubt with tongue in cheek, that the only surviving, Victorians were to be found in India. If conservatism and the Victorian outlook are synonymous, perhaps he had a point. Where else, but in India, is there such a fetish for acquisition of academic degrees, as the only passport for obtaining employment in government or in industry? And where else, but in India, is there such abysmal ignorance of the form and content of Service education, resulting in the most unfair discrimination against Servicemen, in the matter of employment, during and after their Service Careers? In the mind of his prospective civil employer, the general impression of the Servicemen remains that of the bluff, hearty type, with plenty of brawn and perhaps little brain, fit only for security and watch and ward duties.

The trouble is that, traditionally, the Armed Forces are silent Services. They perform their tasks in a spirit of discipline, unknown to the outside world, without seeking publicity or approbation. They thus tend to be taken for granted. And since service in the Armed Forces is on a voluntary, and not a national, basis, the value of a Service education remains a closed book to the rest of our society. Let us lift the veil of this cloistered preserve.

Entry to the non-commissioned ranks of the Armed Forces is at two levels of education; matriculation or higher, and below matriculation, for certain unskilled trades. Even here, a minimum of general education is prescribed and the recruitment of illiterates has now virtually ceased. Promotion prospects of all categories are linked with the acquisition of higher general education and technical skills, for which facilities are provided in the normal Service training schedule, either in units themselves, or at well equipped instructional establishments, where courses are run on a regular basis. Artificier technical training com-

pares very favourably with the technical courses leading to the award of diplomas by different States' Governments and the All India Council of Technical Education. However, Service diplomas do not find ready acceptance by civil employers, who are unfamiliar with the inputs which go into this training. There are over one hundred trades in the Armed Forces, ranging from the humble bootmaker, tailor and saddler, to the more sophisticated telecommunication mechanic, radiographer, and computer programmer. Practically all technical skilled trades of civil vocations find their correspondents in the armed forces; be they in the realm of civil, mechanical, electrical, telecommunication, aeronautical or marine engineering, medicine, health, food processing and catering, to name only a few in the wide range of Service duties; in addition, of course, to their own special trades connected with the business of war. The technical standards attained are high, since the prime motivation is that of professional pride and team work; as opposed to jobbery and trade unionism, so prevalent elsewhere.

There is vital need to put this expertise on a common platform of academic recognition. If an Armed Forces University were to be set up, a system of awarding common technical diplomas to such artisans could be evolved under its aegis, which would conform to the existing pattern of civil technical qualifications.

The scope and content of the professional training of service officers, which is continuous throughout their careers, makes an even greater call for the creation of such an university. The National Defence Academy which was set up at Khadakwasla after the Second World War, is unique amongst officer training institutions, in that future officers of the three services undergo joint training in a common campus, before going on to their respective service Academies, for commissioning. Public disinterest and innate conservatism caused a quarter of a century to elapse before the three year course of study at this institution was recognised as equivalent to graduation, in the Humanities and Sciences, from a University elsewhere. But for the fortuitous establishment of Jawahar Lal Nehru University, to whom this Academy is now affiliated, there would, in all probability, still be no academic recognition.

Graduation from the National Defence Academy, though recognised at long last, is only the first step in a Service officer's career. Thereafter, he has to go through the whole gamut of post-commission, specialised professional and inter-service training, at different stages of his services. To cater for these educational and other training needs of the Armed Forces, a strong base of instructional establishments exists. At

the graduate and post-graduate level, for the teaching of engineering and technology, there are the College of Military Engineering, the Military College of Telecommunication Engineering, Military College of Electrical and Mechanical Engineering, Naval Engineering College, Air Force Technical Training College and the Institute of Armament Technology. Here, courses of varying duration are conducted in their fields of specialisation. Although the syllabus for the three-year Degree Engineering Course run at the Army's Engineering Colleges is in conformity with that prescribed for Degree Courses by the All India Council of Technical Education, officers are not awarded any degrees, for want of academic recognition by a Corporate University. Technical officers are thus denied a legitimate qualification and cannot enrol themselves for postgraduate studentship in universities outside, except through tedious official sponsorship. For tactical and strategical studies, there exist the Defence Service Staff College, the College of Combat, the different Arms training establishments, the Joint Air warfare School and, for defence studies at the national level, the National Defence College. In medicine, there are the Armed Forces Medical College, the College of Nursing, the Institute of Nuclear Medicine and Allied Sciences, the Institute of Aviation Medicine; in management, the Institute of Defence Management and the Institute of Work Study; in languages and teaching the School of Foreign Languages and the Army Educational Corps College. There are, in addition, over a score of Defence Research and Development Establishments, where enthusiastic and competent civilian scientists are employed side by side with Service Officers. It would be an incentive for them to remain in their fields of specialisation, if their achievements were recognised as in any post graduate research institution. This would be possible only by a Defence University, familiar with and attuned to their aspirations. The Jawahar Lal Nehru University does not have a broad enough charter to cater for these multifarious, specialised disciplines, nor would they sustain its academic interest.

In their endeavour to seek some academic recognition, the Services have resorted to patch-work arrangements, with regional universities. The courses of study at the Armed Forces Medical College are recognised by Pune University. Madras University has recognised the course of study at the Defence Services Staff College, as equivalent to their post graduate courses in related disciplines. But these are, at best, only stop-gap arrangements, and a Central Organisation, such as Defence, has its own problems in dealing with universities, in different States. Though education, including the establishment of Universities, is primarily a State subject, the Central Government has full powers to establish

Central Universities to cater for special needs. The most recent example is Jawahar Lal Nehru University. The Centre also has powers to authorise institutes such as the five Institutes of Technology and the All India Institute of Medical Sciences, to award their own degrees. If these powers have not been exercised in favour of setting up a Defence University, it is probably because of the stock arguments of the preservers of the status quo, which run (and can be answered) as follows; one, that no other country in the world has such an institution, (no one has a National Defence Academy either, but ours is an accomplished fact); and two, a Defence University would tend to remain outside the mainstream of academic life, (are our Agricultural or Sports universities sandbanks in this stream?).

No more need be said of the status and quality of service training institutions to justify their being taken under the umbrella of a Defence University. There are other, more cogent arguments for its establishment. Modern methods of warfare demand a high standard of academic, scientific and technological knowledge. Personnel of the Armed Forces are being progressively trained to the highest levels, to fit them to occupy positions of very widely ranging responsibilities, both in the science of warfare and technological applications. The value of a degree lies in the inherent recognition of the specialisation acquired in a life time of endeavour. It is surely anachronistic to deny proper academic recognition to the professional servicemen, who has devoted a life time to study the art of warfare, and thus, deliberately place him below his counterparts in non-Service organisations, whose academic merit is in no way greater, except for the fact that it is measured in more readily quantifiable academic terms.

Secondly, the establishment of a Defence University with the Chairman of the Chiefs of Staff Committee as Pro-chancellor, a senior service officer as a full time Vice-Chancellor, and a fully representative Academic Council, comprising of Service Officers responsible for military training and education, besides selected leading personalities of the academic world in Science, Engineering and Technology, will review the whole compass of Service education, bring about greater integration of the three services, effect continuous evaluation of Service training institutions, and inform the outside academic community of the contribution being made by Defence to the intellectual life of the Nation.

And Lastly, it will serve as the strongest link in national integration. The Armed Forces have, and always will, reflect the unity of India. Of

late, fissiparous tendencies have unfortunately, crept into our national life. There are visible regional and other disruptive influences at work in our educational systems and universities. Students are at loggerheads with their teachers, teachers with the governing bodies; even the 'Karma-charis' of some universities are on the warpath. The result has been frequent disruption of studies and a steady erosion of educational standards. The Defence University can show to the Country the banner of impartiality, good management and purposeful study, and serve as a model for other universities to emulate.

It is high time for the Victorians, lampooned by Malcolm Muggeridge, wherever they may be, to depart.

JOIN



*UNITED SERVICE INSTITUTION
OF INDIA
(Founded : 1870)*

For the furtherance of

**INTEREST AND KNOWLEDGE IN THE ART, SCIENCE
AND LITERATURE OF THE DEFENCE SERVICES**

For particulars, write to

**Secretary, U.S.I.
'KASHMIR HOUSE'
RAJAJI MARG
NEW DELHI-110011**

The Scope and Application of Human Factors Engineering in The Defence Forces

DR (MRS) AVTAR PENNATHUR

CONCEPT AND PHILOSOPHY

HUMAN factors engineering is the application of behavioural principles and data to engineering design with a view to ; (a) maximise the human's contribution to the effectiveness of the system of which he is a part, and (b) reduce the impact of the over-all system on him. The area of human endeavour which pertains to designing things, tools, equipment and hardware which can be used effectively by human beings and to creating environments that are suitable for human living and work is referred to variously as Human Factors Engineering, Human Engineering, and Ergonomics.

The Philosophy underlying human factors engineering is the integration to the fullest extent of *man, machine and the environment*. The tools that the man handles from the simple saw to a complex Jet Aircraft and the conditions under which he has to manipulate them come up for study and scrutiny, with a view to ensure comfort, ease of performance and safety of the human operator and optimum output and efficiency in terms of speed and accuracy of the required operation.

The major elements of human factors engineering are : equipment, environment, tasks and personnel. Each of these consists of many sub-elements, each of which may influence the efficiency of man-machine system.

TABLE 1
ELEMENTS OF HUMAN FACTORS ENGINEERING

Equipment	Environment	Tasks	Personnel
Controls	Altitude	Content	Intelligence
Displays	Temperature	(Procedural)	Sensory
Equipment dimensions	Illumination	Duration	Capability
	Ventilation	Feedback	Motor Capability
*Type and arrangement of internal components.	Vibration	Response frequency requirements.	Training
	Noise	Accuracy requirements	Experience
*Test points		Speed requirements	Motivation

* Primarily for maintenance men.

All these elements are organised into a meaningful whole by the system which lays down the requirements for this organisation in terms of performance criteria or goals : number of outputs per unit time, e.g. messages transmitted each hour; or precision of response, e.g., allowable bomb miss distance of 50 yards ; or speed of response, e.g., 1600 mph in a fighter.

Human factors engineering is a collaborative effort of several disciplines concerned with the man's role and functions in man-machine systems. In order to design the system effectively all the factors which might influence the ultimate performance of the system ; men, machines environment, inputs/outputs, and goals have to be considered.

MAN MACHINE SYSTEM

In a closed-loop man-machine system (MMS) the operator receives information, (1) from the equipment via displays, (2) makes certain decisions (3) involving that information, and operates controls (4) to affect equipment status (5). The equipment in turn provides information about its changed status to the operator (1). And so the cycle continues until one turns either the machine or the man off. The interaction between man and his machine creates the system relationship.

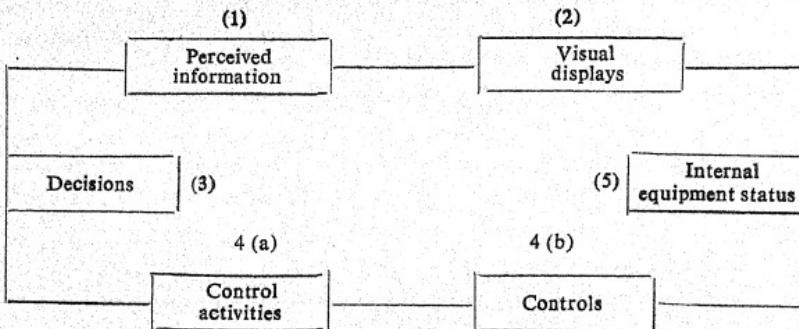


Figure 1. The Man-Machine System Loop.

In a closed-loop system like the MMS change in one element produces a change in another. With an increase in the task accuracy requirements, e.g., the speed with which the operator must activate his controls, personal elements are affected; motor capability must increase and training may have to be intensified. An increase in the complexity of displays, e.g., substituting a multiscale meter for a simple indicator

requires that the lighting which was adequate for the indicator be increased for the meter. With an increase in system performance criteria all the MMS elements need to be adjusted accordingly.

It is cheaper and easier to adapt equipment to human capacities than it is to modify human capabilities to equipment requirements. It is easier to select different components or to arrange them differently than it is to add more sensitive visual acuity, endow him with more than his native intelligence or change his physical dimensions to a more suitable size.

The complexity of our modern technological devices does not respect even the highly selected and trained. Air craft pilots are both highly selected and trained, and yet many aircraft accidents result from human error (Beaty, 1969). The goal of human factors engineering is, therefore, to optimize the design of equipment from the standpoint of the equipment user so that his efficiency will be at its greatest. It attempts to 'tailor' equipment to the capabilities and limitations of the user.

APPLICATIONS OF HUMAN FACTORS ENGINEERING

The field of human factors engineering has evolved in the past twentyfive to thirty years. During World War II psychologists were called upon to assist engineers in the development of weapon systems, when it was found that some of the new items of military equipment were not designed appropriately for human use. This was especially true of items of equipment, such as high speed aircraft, radar and fire control systems which could not be managed effectively by their operators. Human errors were excessive and many accidents occurred because of human mistakes which are attributed to design deficiencies. The help rendered by the psychologists at first involved suggestions for the design of knobs, levers and dials. A number of investigations were concerned simply with the evaluation of these devices in terms of the speed or accuracy of human response. Later the team approach to systems design enabled psychologists to use their knowledge of various sensory and motor aspects of man's behaviour.

The field of human factors engineering, while it draws upon findings within the general field of experimental psychology, is basically concerned with specifying in physical terms, those properties of human behaviour which are important for the control of machines.

The systems concept is the basic idea that enables us to put the man and the machine on even terms. Man performs the controlling acts

in the system. The specific human facets of man-machine system, such as information transmission, display-control compatibility, work space, and environmental variables should be viewed within the conceptual frame-work of the total system.

The design and development of a system can be viewed from essentially three points of view (Van Cott and Altman, 1956) :

- (i) The philosophy of *machine-oriented design*, with primary emphasis upon the machine; the human being was "adapted" to the machine through selection and training procedures;
- (ii) *Man-oriented design* point of view, with emphasis upon adaptation of the machine to the man;
- (iii) *System-oriented design philosophy*, in which the emphasis is that of designing a system in which there is something of an optimum integration of men with machine components in order to obtain the most effective achievements of the system objectives.

In more recent years; there has been a shift towards placing greater reliance upon systematic research and reduced emphasis upon human experience as the basis for developing principles and data to be utilised in adapting equipment, work space and environment for human use. The recognized necessity of taking human factors into account in the design of elaborate military, space and electronic systems has been mainly responsible for the impetus of current attention to human factors engineering.

Human factors engineering is not applied to a limited set of design problems, but as McCormick (1964) has rightly suggested that virtually all the things people use, and the environments in which they live and work, be viewed in terms of their possible human factors aspects. Good human factors principles could be applied to equipment, devices and tools used in human work; military equipment, transportation equipment, aircraft cockpits, air traffic control centres, military vehicles, household furniture and appliances; many diverse consumer products; clothing and items of personal use, design of homes, schools, hospitals, offices, libraries, farm implements, factory lay-out and factory machinery etc. In America, the emphasis has been primarily on military-equipment problems, whereas in Europe more emphasis has been applied to domestic problems.

Human factors in World War II were largely research-oriented but with a very strong applications-orientation. Interest was centred on relatively new systems, such as aircraft, radar and sonar, which imposed

special demands on personnel. The investigation of personnel performance in these systems, suggested ways of improving the design of these systems, like the study of pilot errors in reading altimeters (Fitts and Jones, 1947).

Human factors research cannot be applied to design as "on-call" consultants who merely refer the engineer for solutions to specialised journal reports or handbooks. But a direct, continuing communication is necessary between the engineer and the human factors specialist, because design problems and solutions tend to change, sometimes markedly, as system development progresses. Design is not static, nor does equipment spring into existence full blown. Design is progressively elaborated and refined from its original rather gross concept. System development has become progressively a team affair and human factors specialist must be a member of the project team and intimately involved in many aspects of system development. The man-machine system concept means that many systems aspects have human factors implications which require analysis.

Human factors specialist analyses the inter-relationship of man and machine and is almost exclusively a product of western technological development. In addition to the United States, human factors specialists are found in Britain, France, Holland, Germany, Russia, Japan and Italy (Bertone, 1969). In so called underdeveloped countries, depending largely on the west for their technology, such as Arab nations, Indonesia and African republics, we will find few, if any, human factors specialists. It is estimated that there are probably about 3000 people specialising in human factors in the United States. In Europe one finds approximately 500 ergonomists who are essentially the same as human factors specialists.

The human factors specialists are concentrated largely in industries serving military defence. There are several reasons for this. The discipline was first developed under military sponsorship and still continues in a close client-relationship to the department of defence. The military are the most concerned about the effectiveness of the man-machine relationship because the systems they develop are the most complex and demanding of human personnel and because they cannot, as civilian industry often does, accept inefficient performance with their systems.

Military systems are usually operated under great stress than are civilian systems; this imposes greater burdens on the operator and makes

the proper man-machine relationship more essential in their design. Man performs the controlling acts in man-machine systems, leading form information to action. The perceptions and estimates derived by the operator from the inputs presented to him by the displays form basis of decision. However, there is a limit to the amount of information that can be handled in immediate memory at any one time. The behaviour of the operator is intermittent or sequential. To try to think about a problem and *at the same time* to try to make the process that you are going through the object of thought and to produce in language from the mental steps that you go through is difficult if not impossible. To do so would probably affect the efficiency of his performance.

The implications for equipment and systems design are clear. Do not let situations arise where more than one perceptual interpretation is possible. Keep the cues for recognition unambiguous. Provide an adequate basis for the kinds of judgements or estimates that must be made. Define the decision rules explicitly.

HUMAN PERFORMANCE AND SYSTEM EFFECTIVENESS

System functioning is critically dependent upon human activity. Any characteristic of the system which makes it difficult for operators and maintenance men to do their job reduces the efficiency of equipment functioning. Human efficiency is indicated through *errors* and *time* (*delays*). An error is any deviation from the performance required of the operator to accomplish the system function, which impairs the system functioning.

The errors may be :

- (a) a failure to perform a required action—that is, an error of omission;
- (b) the performance of that action in an incorrect manner—that is, an error of commission; or
- (c) its performance out of sequence or at an incorrect time.

Time as an index of performance refers to the operator's failure to complete an equipment task *when* required by the system mission, or his failure to respond quickly enough to some signal or cue requiring an action.

The operator's failure to perform correctly may lead to one or more of the following situations. The performance of the equipment may

be degraded, the goal of equipment functioning may not be accomplished, for example, in the radar system, the operator's failure to see the target signal on his scope means that, although the equipment continues to function, it does not perform its detection mission. A more serious consequence of an operator error is equipment malfunction, where not only is the equipment mission not accomplished but the means of accomplishing the mission is at least temporarily lost, for example, a recent study revealed that 13% of all avionics equipment failure reported in B-52's at two air bases were caused directly by operator error (Meister et al., 1970). Most serious effect of operator error is a hazard to his and other's safety, for example, when the pilot of an aircraft makes a mistake, his crew and passengers may be injured or killed.

The possibility of human error is accepted by every one; however, human factors assumes that the error is not inevitable, is not the consequence of human "fallibility". Rather the assumption is made that error occurs only when the conditions which predispose the human to make the error exist. In man-machine systems equipment characteristics and the nature of the tasks required to use the equipment may lead to a higher human error than one would normally expect on the basis of chance alone.

The role of human factors in system development is, among other things, to prevent the design of equipment whose characteristics may predispose to operator error. In that sense the analysis of equipment from the stand-point of those factors which could lead to error is an integral part of good design practice. However, "good" design practice by which engineers mean the electronic, mechanical etc. principles which they ordinarily apply to solve design problems will not be sufficient to deal with most human factors design problems. Solutions to these problems require a special way of analysing equipment—in terms the effect of equipment upon the operator as well as the effect of the operator on the equipment—and special techniques.

HUMAN FACTORS RESEARCH AND ARMED FORCES

The scope and potential of human factors research for the defence forces in India is vast and yet very largely untapped. A review of the research undertaken by the Directorate of Psychological Research since its inception over two decades ago has revealed that there has been an awareness of the need to undertake research in the area of human factors engineering for the last fourteen years. Studies in aircraft accidents (Adiseshiah, 1958) and in load stress and efficiency among signal operators

in 1959 by the present author were the earliest studies undertaken in this field.

The recognition of the need for research in this area lead to the formation of Applied and Human Engineering Research Division in the Directorate of Psychological Research towards the end of 1962. However, till today, it has not gained the momentum that should have in keeping both with our requirements of rendering human factors service and support to the defence forces and with the development in this field made in other countries, like U.S.A., U.K., France, Netherlands, Japan and Australia to mention a few.

Human factors Studies could be carried out with respect to :

- (i) Equipment currently in use and planned to be developed in future. The physical characteristics of the equipment to which the personnel must respond, e.g., the arrangement of controls and displays would need to be critically analysed.
- (ii) The physical surroundings and the environment in which the equipment is required to be operated. The physical layout of the room/work area, noise level, temperature, lighting, arrangement of other equipment in the work area, should be critically analysed.
- (iii) Tasks to be performed. The characteristics of the jobs which people must perform in order to accomplish performance goals, e.g., the length and complexity of operating procedures.
- (iv) Personnel required to perform the task and to operate and maintain the equipment.

The Defence of Bombay High

LIEUT COLONEL V K SHRIVASTAVA

FIRST oil well was drilled in 1859 by Colonel Drake in Pennsylvania USA. With the discovery of large quantities of oil in the Middle East countries, commercial use of oil increased. It soon became the most economical and attractive form of fuel for various transportation systems. Oil gradually replaced coal as the basic source of energy and simultaneously gave birth to a series of petrochemical industries. In the last four decades or so its importance has attained gigantic proportions due to its necessity for rapid industrialization. Sudden increase in demand has easily out-paced the ability of nations the world over to readjust to the changing energy pattern. Further, the Arab countries in the recent past have successfully used oil as a powerful weapon to influence world politics and economics. The net result has been growing shortages in supply of oil.

EXPLORATIONS IN INDIA

Search for oil in India began in 1866 when it was first discovered in Assam at Digboi (Earlier known as Barbhil). Follow up efforts however were slow. Production at Digboi was a mere 18,000 gallons a day till 1921. Subsequent intermittent exploration efforts by Burmah Oil company, Oil India and Indo-Stanvac Petroleum Project were disjointed and met with little success. By mid fifties however, India's policy towards oil had crystallised. On 14 Aug 1956 Oil and Natural Gas Commission (ONGC) came into being. Within a span of about two decades ONGC has over 40 'discoveries' of oil and or gas bearing areas to its credit.

Steep increases in oil prices towards the end of 1973 imposed enormous burden on our foreign exchange. National efforts in search of oil were intensified to attain self sufficiency. Extensive reconnaissance, mapping, geological surveys and special studies were carried out. Simultaneously, India embarked upon her offshore ventures.

THE BOMBAY HIGH

Bombay High oil fields are located 160 km off Bombay. All drilling platforms are serviced by chartered IAF helicopters and by a hired

Canadian one. Entire crew is stationed on the drilling platforms for a 14 day shift. They are then brought back to Bombay for 14 days off. Oil was first struck here in early 1974. Commercial production began in May 76 with a production potential of two million tonnes per annum (MTPA). It is to be stepped upto an optimum of ten MTPA by the end of 1980. Besides, it will also supply 1.2 million cubic metres of gas to Trombay Fertiliser Plant. Phase one of the development programme entails installations of four platforms, each in turn drilling three oil wells. From here the sub sea lines carry the oil to a production platform where the gases are separated from the crude. Next stage involves pumping of this processed crude to a Single Buoy Mooring system (SBM) and to the storage tanker moored permanently alongside. Sub sea lines then carry the crude to an export SBM and export tanker for onward carriage, to the refineries.

India has commissioned five of the most advanced drilling rigs in the world at Bombay offshore. These being :-

- (a) *Sagar Samrat*. A self propelled jack up rig owned by ONGC. It is presently drilling at Angria Bank off Ratnagiri.
- (b) *Haakon Magnus*. A semi submersible rig drilling in the Western portion of deeper continental shelf of Bombay High.
- (c) *Dalmahoy*. A drill ship that has recently struck oil at North Bassein-midway between Bombay and Bombay High.
- (d) *Gettysburgs*. This jack up vessel is exploring structures West of North Bassein.
- (e) *Shenandoah*. A jack up platform engaged in exploratory and development drilling at Bombay High.

NECESSITY FOR PROTECTION

All drilling ships, production platforms, oil well heads, sub sea lines and tankers moored with the SBM are vulnerable in the extreme. It may be of interest to note that save for Sagar Samrat the drilling rigs mentioned above have been chartered at the rental value of 90,000 dollars per day. Also that these installations are located well beyond the limit of territorial waters which extend only upto 12 nautical miles. Despite a UN conference on the law of the sea, conflicts to extend property rights on the sea and the sea bed continue.

THE THREAT

Security of Information. Details pertaining to the layout of the Bombay High, existing security arrangements, alarm systems and the

reaction time are of vital importance for an attacker. Information regarding its potentials is useful for commercial espionage. It will be only fair to assume that this installation is well covered by intelligence network of the countries, who may or may not have immediate ill designs against us. Most accurate, upto-date and continuous flow of information can be had only through a 'contact' amongst the crew members. Lure of money, women and subsequent threats for black mail are some of the common methods employed to break the loyalty of a prospective 'contact'. Presence of foreign nationals, because of the chartered equipment, makes the situation more tricky.

Terrorist Attacks. In the recent past terrorist organizations have resorted to hijacking and or taking hostages to impose their will on their adversary. Airliners are repeatedly hijacked despite elaborate security checks at the airports. Despite more than the usual security arrangements Israel's team members were taken hostages right in the midst of the Olympic village. Because of its isolated location, high cost of the equipment involved and the presence of the multinational crew on the drilling rigs Bombay High presents an ideal target for such an operations. Having seized, these installations can either be destroyed or held for ransom together with the crew members as hostages.

Air Threat. According to Viscount Trenchard 'destruction of enemy's means of production' is one of the four principles in the use of air power. With the ever increasing potentials of this air power Bombay High oil fields are exposed to following threats:-

- (a) Extensive, photo and visual recce during cold war period for gaining of information.
- (b) Rocket attacks and light weight bombing by ground attack aircrafts. The hostile task force could RV far into the sea and then close in far a 'kill' at dusk-skimming low over the water to avoid radar detection, and with setting sun behind them to present a difficult target for engagements.
- (c) High level bombing.

It may be of interest to note that these oil fields are well within the IRBM range (maximum upto 2500 kms) of our immediate neighbours. Such missile capabilities are attainable by them in foreseeable future.

Attack by Sea. In December 1971 own ships successfully attacked oil installations on Keamari Islands off port Karachi. Fire raged for two days and could be seen sixty miles away. During the same conflict enemy sub-marines are known to have operated along our coast lines. Thus the oil tankers alongwith the SBMs, submerged structures of drilling rigs and production platforms, all being stationery, are easy prey for torpedo attacks. All these targets, as also the sub sea lines and the oil well heads, are vulnerable to charges being attached to them by frogmen. Engagement of these installations by a Naval task force, with their accurate long range guns, is very much a possibility.

COUNTER MEASURES

Security of Information. It is a joint responsibility of all those who are working on this project. Some very elementary methods can effectively check loss of valuable information. Crew members must be educated to be security conscious. It is also necessary that importance of security be communicated to them repeatedly through talks, circulars and display of posters. The knowledge of critical information pertaining to the installations must be restricted to the essential few. The principle of 'need to know' should be applied. It is adviseable to check on the antecedents of those who hold key assignments. Use of 'under cover' workers is an effective way of breaking the 'ring'.

Guarding against Terrorist Attacks. To storm the installations by surprise terrorists must find their way into, or close to, these installations. The methods can be as many as one's imagination may stretch. Consider for example :-

- (a) Faking their way in, with forged passes, as workers during the change of shift.
- (b) Approaching these installations in small life boats posing as victims of a ship wreck.
- (c) Hoaxing their way on board as a delegation carrying brief cases—deadly ones at that.

It is therefore imperative that the identity of all those arriving on board is established. All equipment, packages, tool boxes and brief cases must be subjected to thorough security checks to guard against weapons and or explosives being smuggled in. Frisking of people and use of metal detectors are adviseable. Even seemingly harmless possessions like cameras or transistors of visitors must be collected soon on arrival. It must be appreciated that the system of such checks can be extremely effective since shift changes only once in 14 days. Also that all arrivals and departures are only through helicopters single entry/exit system.

Countering the Air Threat. These oil fields are exposed to air threat from the sea side. It is imperative therefore that own interceptors be scrambled in time to engage the intruders. What is required therefore is an efficient detection and warning system. There is a necessity to select suitable sites for erection of powerful radar stations. These sites must also cater for the probable expansions of oil fields off Ratnagiri and in Kutch basin. However with the imminence of hostilities surveillance of seas due West of Bombay High, through ships radar, is considered essential. This integrated warning system, to be of use, must have reliable communications with the air bases where the allotted air effort must stand by in readiness. It may be pertinent to note that through effective alarm system, backed by quick reaction at the air base, Royal Air Force frequently intercepts Soviet aircrafts prowling over Britains North See Oil Installations.

Warding of Sea Attack. Keeping in view rigorous climatic and sea conditions Britians North Sea Oil Installations are supposed to have a 'Magic Ring' of 500 metres around them to guard against frogmen type of attack. In more temperate and mild sea conditions at Bombay off shores a 'ring' of 1000 metres appears to be more viable. Installation of search lights and seismic censors are recommended. Erection of torpedo nets is considered essential. These nets will also be an obstacle for frogmen to negotiate. With the outbreak of hostilities it should be the responsibility of own Naval crafts to protect these installations against direct attack of hostile ships.

Navy takes steps, in the event of war, to protect merchant shipping and to keep the sea lanes open. Similarly, by virtue of its location, the responsibility for the defence of Bombay High, including coordination of air effort, should be that of the Navy. Inherent disadvantages of dual or multiple control are too obvious to be elaborated.

CONCLUSION

Two American firms were given oil sharing contracts for Kutch and Bengal Basins. Saurashtra Basin was subjected to exploratory drilling by ONGC. Cauvery Basin has been leased out to the Canadian Consortium, Asameria, where the first oil well was spuded, in the Gulf of Mannar, on 8 May 77. Thus India is well committed in her off shore ventures. The defence of Bombay High, and other oil fields in times to come, has thus become a subject meriting our immediate attention.

The security aspects of offshore production facilities were subjected to discussions in Greenwich by Atlantic Treaty Association and were also included as an agenda point by the International Institute of Strategic Studies in Sweden. Necessity for protecting these high value assets must be realised by us too : sooner the better.

Psychological Warfare

LIEUT COLONEL V UBEROY

INTRODUCTION

PSYCHOLOGICAL Warfare (Psywar) in its general term may include any well planned and deliberate campaign launched by an agency to influence the minds of individuals or groups. In military sphere, it aims at influencing the minds of the entire fighting machine so as to bring about the desired effect on the war effort. Consequently, Psywar plays an important part in achievement of war aims.

Psywar is not new to the art of fighting. It has played a significant role in the war effort from the ancient times. In Mahabharata, Psywar was in action when Daron Acharya was made to believe, wrongly, by the Pandavas that his son Ashwidhama, had died on the battlefield. Thus it succeeded in rendering him ineffective during a crucial phase of the Battle. It would be reasonable to assume that Psywar was instrumental in making the mighty Alexanders' Armies lose heart in waging further battles beyond the Indus in spite of being victorious on the battlefields. In our own times, we find properly organised and well coordinated efforts towards that direction by the Allied as well as Axis powers during World War II. Psywar is equally effective in motivating own sides as it can be for causing demoralisation on the other side. Traditional singing of glory and gallantry of Rajput warriors by the Bhaats of Rajasthan served this purpose in an excellent manner. The part played by the BBC during the second World War and its success in sustaining the morale of the Allied Armed Forces and population is too well known to give details here.

Psywar has been taken to new heights of sophistication in tune with the modern age. Some of the weapons used in this field are so subtle that the target does not even realise that it is and, has been, under attack.

We, somehow seem to have neglected this aspect of Warfare. As a result, hardly any importance is attached to the conduct of Psywar.

It is time that we understood the significance of Psywar and adopted it in the right measures in the interest of our national security.

THE AIM AND SCOPE OF PSYWAR

The Psywar covers the entire spectrum of war machinery as its target. It includes the political leadership directing war effort, leadership and rank and file of fighting forces, administrative support units, workers engaged in the war effort and the general population in the target area. While it attempts to weaken the desire of the opposing side to fight, it aims at motivating own side for greater and all-out effort and sacrifice to win the war. The extent to which it succeeds on both sides is dependent upon the proficiency with which Psywar is waged.

Psywar is waged continuously during war and peace. Unlike active military operations, Psyops cannot be conducted effectively if these are to commence only on the outbreak of hostilities. It has to be a continuous process remaining operative in peace time as well as during war.

Psywar is carried out by a series of Psychological operations (Psyops) directed towards the target. Irrespective of the side to which the target belongs, the essentials of Psywar and Psyops remain unchanged. Every Psyop, which ultimately would lead to achievement of the over-all aim of Psywar should have a clearly defined aim. Various approaches are then worked out which in a coordinated effort would achieve the aim of a particular Psyop. Each approach would be based on a particular idea or 'message' which must be made acceptable to the target.

The Crux of Psywar is the 'Message'. The 'Message' implies the underlying idea that is expected to have the desired impact on the Target. The Message has to be such as would appeal to the emotions, sentiments, sense of reasoning, the wants of the people comprising the target.

A great deal of research, imagination and coordination has to be put in to formulate the 'Message' for a particular target. Such messages must be credible and should conform to the over-all situation not only in the military sphere but embracing the national and international levels.

Having formulated the approaches to achieve the aim of the Psyop, a suitable delivery of the message on to the target has to be organised.

Since the basic target of Psywar is human mind, all media which can carry the 'Message' to influence the mental state of the individuals as well as groups are the weapons of Psywar. Broadly speaking, these means are :—

- (a) Radio Broadcasts, telecasts and movies.
- (b) Printed material like books, periodicals and pamphlets.
- (c) World opinion.

There is hardly any necessity to elaborate upon the operations to the above mentioned media. A pertinent point to remember while using any type of media, is that it is not only the media but also the manner in which it is used to achieve the desired results, that matters.

THE PLANNING

The conception and planning of Psywar has to be carried out at two different planes. In the case of Psywar directed towards foreign targets, the conception and planning will have to be carried out at the highest national level. Suitable representatives from the services should be coopted at this level to the extent of their involvement in advisory capacity and conduct. For Psyops aimed at influencing own population and armed forces, a joint committee of civil and military officials at the Chiefs of Staff Committee level should be constituted.

The General directive for Psywar for both types of objectives would follow pattern similar to those given below :—

- (a) Various Objectives. These may be given in terms of regions, ethnic, religious or social groups or organisations.
- (b) Desired Results.
- (c) Any special instructions like priorities to the objectives, intensity of Psyops etc.

Based on the above, the detailed planning would consider each objective or target separately under the following broad heads :—

- (a) Detailed description of the Target Area of Groups.
- (b) The relevant data of the target including historical, cultural and religious aspects.
- (c) Suitable points which can be made use of for immediate and long term effect.
- (d) Themes to be stressed.
- (e) Themes to be avoided.

(f) Media requirement.

(g) Any coordination or parallel thrust required from other organisations.

(h) Allocation of resources.

It must be emphasized that the detailed planning would require substantial effort in research, imagination and perception. The staff entrusted with planning of Psyops would have to be selected with great care. A number of them would have to be experts in the field of human Psychology, mass communications, anthropology and translation. In addition, it would be necessary from time to time to obtain the services of experts in various other fields on "as required" basis.

CONDUCT OF PSYOPS

Psyops are conducted with the following two types of targets in view :—

(a) *Targets in Foreign Countries*—Generally potential adversary or actively hostile power.

(b) *Own people* :—

(i) A section of own population.

(ii) Own forces.

FOREIGN COUNTRIES

The following type of objectives could be discussed in the foreign countries considered as targets :—

(a) The entire population.

(b) Certain ethnic, religious, political or linguistic sections of the population.

(c) The Armed Forces.

It should be obvious that the actual conduct of Psyops and the 'messages' for the three types of objectives detailed above would vary in each case. Environments of peace and war would also make substantial difference in the conduct of Psyops.

OWN PEOPLE

As discussed earlier, planning and conduct of Psyops against foreign targets will have to be organised at the National Level to which services can make their contribution but are not in a position to play the major role.

A SECTION OF OWN POPULATION

At times, it would be necessary to conduct Psyops among a section of own population, it may be in case of insurgency, large scale civil riots or a national calamity where the situation has been handed over to the Army temporarily.

For the insurgent section of the population, Psyops assume vital significance. Being a battle for winning the minds and hearts of the people it is no exaggeration to say that without effective Psyops, military operations do not have much chances to succeed. Counter insurgent operation should always be considered as a coordinated combination of military operations and Psyops. As part of counter insurgency operations, Psyops would strive to convince the insurgents, and the section of the population sympathetic to them, about the futility of the cause and means adopted by the insurgents, to bring about isolation of the insurgents from the population and to explain the true role of the armed forces engaged in dealing with the situation to the general population. It would also aim at countering the inevitable propaganda of the hostiles in the form of exaggerated and fabricated tales of atrocities committed by the armed forces on the population. In aid to civil power as in case of a large scale lawlessness or a national calamity, Psyops would be conducted to explain the part played by the armed forces, the constraints under which they are discharging their duties and the response expected from the population. Troops engaged in controlling riots and operating in the midst of dense population centres are made target of false allegations of harassment and illtreatment of the population, specially of women and children. Psyops would be planned and executed to counter this trend.

OWN FORCES

Psywar, (or Psyops) is perhaps a misnomer when used in relation to own troops. It is more in the form of keeping them informed of general happenings around them. However, for ease of reference this term continues to be used in this Article.

Psyops conducted in respect of own troops would aim at :

- (a) Promoting intense belief in the cause of military operations.
- (b) Assisting in achieving high morale and motivation.
- (c) Counter enemy Psyops directed towards own troops.

Somehow, we seem to have given least attention to conduct of Psywar for the benefit of own forces. Perhaps it is due to the fact that we take their morale, motivation and beliefs for granted. There is a

need to review this approach. Even under the best of environments, the pace of Psyops conducted for own troops should never cease or slow down. As in the case of foreign targets, Psyops should be a continuous process, executed as vigorously in peace as during active operations. Conduct of Psyops among own forces is comparatively easy and can be highly effective in its results and cost effectiveness.

The impact of right type of Books, articles, broadcasts and telecasts on the hearts and minds of troops needs no elaboration. Psyops should make use of this media to great advantage. Translation of outstanding books of personal accounts of various battles, heroic deeds, highlights of regiments fighting for their traditions etc into Hindi and various regional languages and their wide distribution can help create the right impact. Similarly, suitable war movies, dubbed in Hindi, should be widely exhibited to the troops. A periodical in Hindi and regional languages containing digest of suitable articles published elsewhere, should be brought out for wide circulation among the troops.

CONCLUSION

Psywar is an important and vital adjunct of warfare. Its importance cannot be over-emphasised. Be it peace or war, it is being waged continuously by the major powers. On our part, even if we have realised the significance of Psywar in the modern warfare, no practical steps appear to have been taken to plan and conduct Psyops on our appropriate scale. It is time that we took some positive steps towards that direction.

“Colonel of the Regiment” Indian Pattern

GANPAT

In an earlier issue of the Regimental Magazine “Maratha 1976”, an article extracted from a UK Service Journal which came to the notice of Lt Col KM Moghe the then Deputy Commandant was reproduced to give readers an idea of the genesis of this honourable appointment and the duties associated with it from its inception to date, but in the British Army. Do read it again before this article is perused so as to get the right perspective.

In the post independence Indian Army there have been, since 1947, three Colonels of the Regiment based on a tenure of ten years or on attaining the age of 60, whichever is earlier. In these three decades we have evolved, like Indian English, our own system to meet or cater for, to our peculiar requirements of Indian Infantry Regiments as constituted today. Each Colonel of the Regiment's approach to his duties differs considerably based mainly on “personality” and the composition of his regiment. Whereas in today's British Army the Colonel is normally a retired officer hailing from the County/COUNTIES from which men of that Regiment are recruited, conditions obtaining in India differ tangibly and there are valid reasons for such differences which will become manifest as this theme is developed.

Bearing in mind that the aim of the Colonel of the Regiment is to ensure the good name of his Regiment and the welfare of All Ranks, the first point that comes to mind is the scope of his responsibility. In the contemporary British Army, the amalgamated Infantry Regiment normally consists of a Depot and three battalions one of which may be abroad (NATO, Northern Ireland and so on). It is therefore no major problem visiting units and keeping a finger on the pulse. In our Army, a normal Infantry Regiment like ours has a Centre, sixteen battalions, one major ERE sub unit and two or three affiliated Territorial Army battalions plus a large number of personnel on Staff, instructional and ERE; this is quite a formidable proposition and one wonders whether a

single Colonel of the Regiment can prosecute his onerous and responsible duties conscientiously and to his satisfaction—even with the best will in the world. Apart from the enormous distances he has to travel and the awesome climatic and terrain conditions, he has to face, the Colonel is permitted a paltry six visits in a year; this periodicity was good enough in the past when there was only a Centre and five active battalions. Simple mathematics will show that in the present context, a Colonel of the Regiment can visit a unit only once in 3 years or thrice in a 10 years tenure. This position is further aggravated with the implementation of the new tenure system of not more than two years after retirement !! Now consider the distances one has to travel and the size of an English County and compare it with any of our States ! The argument that one can now fly to the furthestmost corners of the country is not tenable when one has to bear in mind the vagaries of the weather on our borders and the terrain; in NEFA for instance, one may fly to Jorhat, Silchar, Dimapur or Imphal but thereafter may well lie a 24 hours road journey. In UK, the maximum travelling time taken for a visit (even to Northern Ireland or NATO) would rarely be more than a couple of hours at the outside.

In UK, the Colonel is usually a senior retired officer who hails from the County or one of the Counties from where men of his Regiment are recruited and is thus well placed to deal with welfare and other problems. In any case the War Office is next door as it were. Not so in India. The Colonel may hail from Kashmir whereas his men may well be recruited from Kerala ! This explains the rationale behind the decision that the Colonel of an Indian Infantry Regiment must be a serving officer not below the rank of a Brigadier. Thus the recent ruling that a Colonel of the Regiment is now required to relinquish this appointment mandatorily within two years of retirement is a wise and sensible one ; in fact one year would be nearer the mark because thereafter one tends to lose touch, and bargaining power and influence with Army HQ tend to wane. This was my recommendation in a paper in 1968 I was required to submit to the then Chief when I was Deputy Military Secretary.

What then should be the qualifications of a Colonel of the Regiment. Firstly he should be a Brigadier or above. Secondly he should have been commissioned and held on the rolls of the Regiment throughout his service failing which he should have served for a major period in the Regiment. If neither of these two conditions can be fulfilled he should be an officer who, at some time or the other has had dealings with the Regiment and whose loyalty and affection for it are undisputed. In this

context it is worthwhile reminding readers that our last British Colonel General Sir Mosley Mayne was from the Cavalry but, as a Divisional and higher Commander in Eritrea, he developed a great regard and liking for one of our MLI battalions serving in his command. But let there be no doubt that the best bet is an officer commissioned in the Regiment and, thereafter, throughout who has served on its rolls. Should there be a panel of senior officers available, the selection should be on seniority and merit and when one refers to merit one means acceptability, interest, loyalty and ability to do good. At the expense of being criticised, I maintain that seniority itself need not be the sole criterion for the simple reason that the seniormost may not be sufficiently well known or interested in the Regiment (such cases are not unknown in Infantry Regiments). Once a majority decision in selecting the Colonel has been reached, then it is incumbent on the Regiment as a whole to support the elected Colonel without reservation and wholeheartedly. If, however, during a tenure an impasse is reached due to lack of interest, the Regiment should be honest with itself and tactfully recommend to the incumbent (after most careful deliberation) that the Regiment has lost confidence in him and would he please voluntarily resign. It is no use crying over spilt milk thereafter beating one's head !! The advice of senior officers of the Regiment should be sought before such a serious step is resorted to.

Who should be empowered to vote when electing a Colonel of the Regiment ? Some Regiments favour the system of seeking the opinion of all officers of the rank of Lt Col and above. Other Regiments, like ours, prefer to discuss the issue in depth at a battalion commanders conference before arriving at a consensus; I prefer this method provided the discussion is held in camera and opinions are treated as strictly confidential and are not divulged! Before such elections, it should be incumbent on the Centre Commandant to ascertain whether the Senior Officers under consideration are interested or not; this small measure will save endless embarrassment later. Those under consideration should make it a point of honour not to solicit or canvas: if their bona fides are unimpeachable they will, ipso facto be considered and, in any case, our Centre Commandants and Battalion Commanders are now mature enough both in service and years to form an opinion. Such COs would, if they are true to their salt, consult All Ranks beforehand, prior to indicating their choice or casting their vote.

To proceed to the next step, it is now worthwhile considering the duties of today's Colonel of the Regiment if such duties can ever be defined clearly. Is it welfare, recruitment, protection of Regimental

traditions, promotions, good stations or an amalgam of all these and many more? Ask any or most officers today on what basis do they judge the efficiency of their Colonel of the Regiment and pat will come the answer : "On his ability to "arrange" postings and promotions" or, to put it another way, how good are his relations with the Military Secretary, PSOs or the Chief! There lies the tragedy. If a Colonel of the Regiment can do all these things, then good luck to him and his Regiment. If he cannot or does not possess sufficient clout then he is dubbed an ineffective incumbent. The sooner the officer cadre of a Regiment disassociates itself from this belief that the Colonel of the Regiment is not the Military Secretary the better for all concerned. Officer welfare is only one of the many areas he has to oversee. The Colonel of the Regiment can certainly advise the MS in matters of command and career planning or compassionate postings and he can and must recommend bonafide cases. He can and should bring to the attention of the MS Branch any glaring inconsistencies affecting officer welfare. But let us also not forget that Infantry Regiments having a Chief, Army Commander or PSO as Colonel will carry much more clout and this raises the all important issue whether the appointment should be restricted to Major Generals/Brigadiers only or retired senior officers irrespective of rank! Food for thought. When a Brigadier/Major General Colonel of the Regiment has to compete with the higher ranked incumbents thorough staff work, good liaison, honesty of purpose and persistence will surely carry the day. One is reminded of the issue of wearing of leather belts but that is now old hat! As the officer welfare theme has gained credence over the years, it is now essential for the Colonel of the Regiment to maintain a comprehensive black book of the names of all officers by battalions showing seniority, courses attended, gradings, appointments held etc. If he (the Colonel) is on good terms with MS, this information can be readily available from AMS2. In fact it would be a worthwhile consideration as to why MS should not provide data sheets to Colonels of the Regiment as such information has now been computerised and a print-out is easily obtainable.

In as much as officers are career conscious, the JCO cadre is equally conscious of the grant of Honorary Ranks and postings. OR who form the bulk of a Regiment but who are the least vocal, are worried on welfare matters and at times, promotions. Thus, an examination of the strength, by ranks, will indicate where the focus of a Colonel of the Regiment's duties lie. In an infantry regiment, there are, on an average, on its rolls, about 400 officers, nearly a 1000 JCOs and about 15000 other Ranks covering the Centre, active and TA battalions (permanent staff), ERE sub units and personnel on staff and ERE.

There can therefore be little doubt of a Colonel of the Regiment's priorities. Yet, it is a sad commentary that his effectiveness today is judged on his MS capability to "fix" or "arrange" postings and promotions.

What can an Infantry Colonel of the Regiment do for JCOs and OR? Much indeed. Firstly, within the compass of Army Orders/Instructions and Defence Service Regulations, to ensure, in consultation with the Centre Commandant that promotions and postings are impartial and just. To this end he should be "approachable" and be able to sift the chaff from the corn. During visits to units he should make it a point of honour to meet such personnel or enquire about their cases. Very often though, JCOs and OR tend to take undue advantage of what may be construed as an ever sympathetic or kind Colonel; remember, in the case of promotions, it is always the doubtful cases who make such approaches. The award of Honorary Ranks has been computerised thus removing the human element of error or double-dealing. There are many occasions when a Colonel of the Regiment has to listen (or read) of alleged injustices or malpractices. A patient hearing and a thorough investigation of a non embarrassing nature is required. In all such cases it must be the rule to consult the CO and Subedar Major concerned. These two categories of personnel are invariably plagued with welfare problems which demand not only a patient hearing but follow up action with the Regimental Centre and Civil Authorities where personal liaison, wherever possible, helps. Finally, without minimising the importance of Unit Commanders, the Colonel of the Regiment must be readily accessible to all Ranks. In this context it is also worthwhile for the Colonel of the Regiment to meet families of All Ranks and listen to their problems. So much for welfare.

Yet another important area is regimental customs and traditions such as dress, drills and so on. Unfortunately a tendency is creeping in to throw such hallowed traditions overboard and introduce new ones without a sense of historical perspective. Take dress for instance! There have been very profound changes in the last decade some based on tradition and some not. Take the crested leather belt. Its introduction was in keeping with tradition in that MLI troops of yore did wear brown leather belts with a brass buckle until the introduction of webbing. But what grounds are there to introduce black leather belts, white spats and regimental scarves for wear on ceremonial occasions? This is where the Colonel of the Regiment is required to stand firm. A regiment like ours, with over 210 years of glorious tradition behind it must stand by such traditions as dress, light infantry drill,

the hackle, our distinctive lanyard and our brass shoulder title unique in that we have the crest superimposed over the brass letterings. Why must we imitate the Joneses by introducing white spats, cummerbunds etc? Such cases are legion.

Another important facet is regimental history—maintenance of records and exploits and periodic publication of a Volume after say every 25 years (a quarter century). This implies careful documentation of war diaries and digests of service, Part I Orders, Citations, photographs, newspaper clippings, letters of commendation, battle reports etc. It is the responsibility of a Colonel of the Regiment to edit all such documents carefully and assist in proof reading and production. In this context the production and regular issue of the Regimental Magazine is one of his duties.

More often than not, retired officers and servicemen who have given their all for the Regiment tend to be forgotten and are neglected. It is incumbent on the Colonel of the Regiment not only to maintain periodically updated lists with addresses but to ensure that all regimental exservicemen are kept posted of regimental news within the approved bounds of security, are invited to Reunions, Colour Presentations and other such events and are met during visits.

And talking of visits, unless these are undertaken frequently, that intimate first hand knowledge is lost. To overcome the limitations of six visits per year, it is worthwhile grouping units areawise and utilising a sanctioned visit to one unit to fit in other nearby units as well. Else that personal knowledge so valuable will be lacking. These visits should ensure that the incumbent is able to meet the maximum number of personnel possible formally and informally at Bn HQ and outposts. The manner this is achieved will invariably depend on the personality of the Colonel; there is no hard and fast rule. But a regimental dinner night, a meal in the JCOs' Mess, a Sainik Sammelan and inspection of the Quarter Guard are musts. The offer of a ceremonial parade or Guard of Honour should be encouraged as coupled with a visit to the Quarter Guard, a colonel of the Regiment will be able to gauge the standards of turnout, drill and steadiness of a unit which may not otherwise be possible. As a consequence of such a visit, points of common interest to other units should be circulated either directly or through the Centre; there is no better way of raising standards. When meeting the CO in his office, it is advisable for the Colonel of the Regiment to glance through Regimental Accounts, Digests of Service/War Diaries, the Scrap Book, Offence Book and Sainik Sammelan Register. It is well

worth remembering that the programme to be followed and any idiosyncrasies should be conveyed to all concerned so that there are no misunderstandings. A printed booklet at the time of assumption of this office detailing procedures and documents to be produced on such visits will save numerous problems.

And now the equations between the Colonel of the Regiment and the Centre Commandant. This must be established at the outset. Whereas over interference by the Colonel of the Regiment stifles initiative, day-to-day working and harmonious relations, lack of interest in the Centre and therefore the Regiment may well result in undesirable decisions. This equation, Colonel of the Regiment and Centre Commandant, needs to be such that mutual confidence and rapport are achieved. There is also the necessity of the Centre Commandant, meeting the Colonel of the Regiment at least once a year. In the Biennial Battalion Commanders Conference at the Centre, it is advisable for matters to be decided between the Centre Commandant and Battalion Commanders. The Colonel of the Regiment should enter the discussion only when an impasse is reached, if it tends to become acrimonious or personal or if it contravenes existing decisions. The aim at such conferences should be to seek unanimity in arriving at a consensus.

In order to raise the image of the Regiment, achievements in Sports and other group activities are important, especially in the piping days of peace. Unless a Colonel of the Regiment takes personal interest in the development and training of teams and lays down a firm regimental policy in such matters, there is always likely to be conflicting interests between the Centre (representing the Regiment) and Battalions. A via media must be found to satisfy both parties to achieve the regimental aim of improving the image in such spheres.

A Colonel of the Regiment has to handle considerable correspondence-Service/Formation HQ, Centre, Units, Govt Officials and individuals. If a Colonel of the Regiment is conscientious, the quantum of work in handling such correspondence, filing, typing and despatch is such that it is necessary to establish a small secretariat—a clerk, type writer, stationery and a stamp account particularly in the two years after retirement. At the present moment, in our Regiment, at any rate, a clerk has been made available and battalions are required to contribute a fixed yearly sum for purchase of stationery and postage. The time has now come for Army HQ to authorise a clerk and to permit the Centre Commandant to draw a fixed amount every month from imprest for stationery and postage. There

are matters which need to be discussed at the next Infantry or Centre Commandants Conference if this appointment is to be meaningful to the Infantry and the Army. And it is or else why would the Navy and Air Force emulate the Army ?

Liaison with the DG Resettlement, State Govt, Collectors, IG/DIG Police in areas from which our men are recruited is most essential from the welfare side. Visiting such personalities in uniform and using highly stylised crested stationery helps to create the desired image.

What conclusions does one reach ? Is there a tangible difference between the British system and ours ? There is and there isn't. The responsibilities are the same—maintenance of traditions; decisions on dress and customs; welfare of All Ranks; Command planning ; peace stations, maintenance of the family feeling by keeping in touch: liaison: hysterical. And yet in carrying out these functions there are certain basic differences as a result of the size of an Indian Infantry Regiment, the class composition and distances to be covered. These circumstances demand that an Indian Colonel of the Regiment *must* be a serving officer.

And what can be done by the Government and Army HQ to assist such a Colonel of the Regiment to prosecute his duties conscientiously? These are summarised below :—

- (a) Provide the Colonel of the Regiment with a small Secretariat viz Clerk, typewriter, stationery and a postage account. If the appointment is a gazetted one and approved by the President as the Supreme Commander such a step would not be out of context.
- (b) Either increase the number of authorised visits or permit the incumbent to carry out such visits on a Command basis at the scale of one Command visit per year and one complete day of 24 hours with each unit. This will mean absence five times a year for a period of 10 days at a time. One visit per year to the Regimental Centre is a must.
- (c) Recommending postings of Captains and below within the Regiment. In the past such postings were carried out by the Regimental Centre.
- (d) Making available to the Colonel of the Regiment a complete nominal roll of Officers and JCOs battalion wise (updated yearly) giving non-confidential information, such as dates of commission and promotion, qualifications, courses attended with results, peace/field tenures etc. These data sheets are now readily available as computer print-outs.
- (e) When visiting units, authority to fly a car flag appropriate with his rank, in the regimental colours.

Finally, it is good to remember the maxim "Good Colonel of the Regiment Good Regiment".

How Army Fosters Internal Cohesiveness and National Integration

MAJOR KK DOGRA, PSC, MTE, BSC ENGG (ELECT)

INTRODUCTION

A closer national integration and strong internal cohesiveness are the two con-committant postulates of life in any country which has to guard perpetually against internal and external threats to its national security. The contribution of Army towards national integration and internal cohesiveness is too well known to be reiterated. The Army's role in this respect has been exemplary and of great significance. With personnel drawn from different parts of the country and belonging to different religions, linguistic, ethnic and cultural groups, Army has been and is a symbol of national integration and unity.

Our Army is a national army in the true sense as it embodies the full representation of its citizenry from all states, castes and creeds. It has a genuine sense of involvement in the nation, its people and affairs and way of life. Apart from defending the nation in four wars each of short duration since independence it has made singular contribution in national reconstruction. Since the independence the Army has made radical changes in matters like training, recruitment and discipline. All these changes were brought in to have an Army which has its own indigenous traditions and genius, a sure way of inculcating a sense of national honour, and integration. Also after the British left India the socio economic changes and their impact on the armed forces demanded a fresh and dynamic approach to leadership, manmanagement and officer-man relationship which was based more on participation leading to integration. Our's is an Army which forms part and parcel of the people amongst whom it dwells and the receptive minds of the soldiers are always open to their thoughts and ideas. During the last two Indo Pak wars it has truly been seen that inspiration for the Army to fight on came from the inspiration

of the nation and the backing of the whole population. Only an inspired nation can send forth an inspired army in war to emerge as victors against aggression and expansionism.

THE GROWTH OF FEELINGS OF INTERNAL COHESIVENESS AND NATIONAL INTEGRATION

It must be understood that the spirit of nationalism emerges only if there are feelings for internal cohesiveness and national integration. Nations, it has been said, are made in solitude. Until the middle of the nineteenth century, India seldom had the solitude to become a nation. Moreover the country was too vast. All the Indian empires were a rare phenomenon and they were short lived. The integration process in India was again and again interrupted by foreign invasions. Even if there had been no foreign invasions it is doubtful whether a country of the size of India could have become a nation before the development of modern means of communication. It is therefore not at all surprising that India was not a nation when the British first arrived here as traders. In fact modern nationalism itself is a very recent phenomenon. Even in Europe it did not emerge till the beginning of nineteenth century. But it would be wrong to conclude, as so many observers tended to do, that India was lacking in the essentials of nationalism or that vastness and diversity of India ruled out the possibility of emergence of a united Indian nation.

If there was any country in the world where the prospect of a united nationhood seemed hopeless in the nineteenth century, it was India. It was a vast country, almost a continent. Its area was as large as that of Europe, minus Russia, it has a huge population. And this huge population was divided by almost every conceivable division, linguistic, racial, religious and political. It has more than a dozen major languages and hundreds of dialects. From very early times peoples of different races and climes had been entering India. They came and added to the variety of its population. India contained followers of almost all the major religions of the world—Hindus, Muslims, Christians, Jains, Buddhists, Sikhs, Parsis and Jews. Even the followers of any particular religion were not united. The Hindus, for example, who formed the majority of the population, were divided into innumerable sects, castes and sub-castes. Administratively, the country was not one unit even under British rule, the provinces enjoyed a good deal of autonomy and there were over five hundred semi-independent princely states.

The British were able to conquer India because it was divided. They were very conscious of this fact. They knew that their rule in India would last only as long as India remained divided. The ease with which the British were able to conquer and govern India encouraged them to harbour many illusions about the Indian people. These illusions were reinforced by their almost total incapacity or unwillingness to penetrate the Indian mind. For example, the British generally believed and openly asserted that Indians had no sense of internal cohesiveness and national integration, that they did not mind being ruled by foreigners, because they had been accustomed to foreign rule for centuries, and that they had no capacity for self-government. Now, all this was not correct because there always remained pockets of resentments against foreign rule at one or the other place at odd times throughout the alien rule. There are no people on earth, however primitive, who are totally lacking in patriotism. We all love the soil which gives us birth and nourishes us. We all love our own people more than other people. We all prefer our own language, literature, traditions, religion and way of life to those of others. We all dislike foreigners to some extent. No people love to be governed by foreigners. No people are entirely lacking in the capacity for self-government.

Nature has made the peninsula of India probably the most compact territory in Asia. It has given India a distinct geographical unity and well-defined frontiers. And from very early times the people of India have been conscious of this fact. Communication between different parts of India was frequent. Pilgrims travelled great distances to visit shrines distributed throughout the country. So did merchants and scholars. The physical and administrative barriers within the country seldom impeded the free flow of men or goods or ideas. The two major religious communities in India—the Hindu and the Muslim were dispersed all over the subcontinent. A sense of belonging to an all India community cut across regional and linguistic loyalties. Despite the apparent diversity of language, custom, race and religion, India, from the Indus to the Brahmaputra and from the Himalayas to Cape Comorin, possessed a certain underlying uniformity of life which distinguished it from the rest of the world. The web of Indian life was woven of diverse but interlocking patterns. The divisions of India were many, but they were neither rigid nor exclusive. Thus it can be seen that India never lacked the basic elements which are essential for the making of any nation with strong internal cohesiveness and national integration. During the British regime, India gained the political unity. Common subjection, common laws and institutions began to shape the people of India in a common mould. Indian patriotism could now fix on a single state and this enabled us to regain

inner cohesiveness and unity. The introduction of modern means of communication, the press, new postal system and the railways linked metropolitan centres, and one province with another in a closer, more intimate and loving unity, this gave new impetus to the process of internal cohesiveness and national integration. Also reaction to British economic exploitation and enforcement of unfavourable fiscal policies gave rise to economic nationalism in India.

ARMY'S CONTRIBUTION

Our's is a land of diversity, regions criss crossed by linguistic frontiers and separated by deep rooted cultural loyalties do not apparently lend themselves to the spirit of internal cohesiveness leading to intimate national integration. The democracy based on parliamentary system of government inherited after independence has come to stay and attained maturity as demonstrated by smooth changes of governments, when so chosen by the electorate. Yet sometimes amidst deteriorating moral values and diminishing sense of responsibilities, these days the tendencies which do not aid internal cohesiveness and national integration do raise their ugly heads. As a realistic appraisal of historical role, the Army has played its part well in bringing about internal cohesiveness and national integration, which shows that Army's contribution in this context is unique and exemplary. An organisation becomes truly representative of the national goals when it represents the aspiration of the people who are its part and parcel and those who support it and express faith in it, Army is just such an institution in this country.

Any Army unit is a typical melting pot where personnel drawn from different parts of the country, belonging to different religious, cultural, linguistic and ethnic background are made to shed their individual interests and prejudices and made part of a wider, deep and comprehensive organisation which is dedicated to the national cause of safeguarding the territorial integrity of the country. This process commences with the men giving strength to the unit by their internal cohesiveness and continues till this cohesiveness is integrated at the national level. This is one of the greatest spiritual and intellectual experiences which befalls the men and commanders participating and organising it. This integration finally culminates when all the three services Navy, Army and Airforce are integrated under the ministry of defence and serve as an instrument in the hands of the state to defend the country against external and internal threats to the security of the country. Thus Army is a singular example for the rest of the institutions in the country in achieving strong internal cohesiveness and

intimate national integration based on sound moral values of honesty, integrity, loyalty, justice, fairplay and patriotism. In purely making this precedent the Army exercised good influence on the whole nation towards the achievement of strong internal cohesiveness and national integration.

Living and serving together the soldiers develop a remarkable sense of comradeship, loyalty and national unity and they learn to converse in the same language, thus breaking linguistic barriers. Approx 5500 personnel from Armed Forces, Navy, Army and Airforce, retire every year and they join the main stream of civil life imbued with a sense of national integration and patriotism. Army has not only contributed to the internal cohesiveness leading to national integration in an unobtrusive manner but made singular contribution towards this achievement in a way which was positive and assertive. When we attained freedom there were many semi-independent states which had the dangerous potential for fragmenting the political unity of the entire country. No doubt the sagacious qualities of indomitable Sardar Patel at that juncture came to the fore and we were able to attain politically unified free India but this marvellous achievement was backed by the might of the armed forces and thus it became a reality. The very presence of a competent professional army ensured that semi-independent states were influenced in joining the Indian union. The Army had to execute the will of the state in forcing those semi-independent states which were recalcitrant, to join the Indian union and whenever this could not be done in a peaceful manner. The integration of Junagarh, Hyderabad and Goa could come about only after the intervention by the Army. The army has also been engaged in putting down insurgent movements in Nagaland and Mizoram which could have at one stage proved a threat to the integrity of the nation. While being deployed on counter insurgency operations the Army undertook humanitarian activities like giving medical aid and educating the local population and thus facilitated the return of the insurgents to the main stream of national life.

It is the basic task of the Army to defend the country against external aggression. A sound national defence automatically contributes to the internal cohesiveness and national integration of the nation. Soon after independence the army gave a befitting reply to the Pakistan invaders in J & K. Since independence the army has fought three wars, in 1962 we fought against Chinese and in 1965 and 1971 we fought in defence against aggression from Pakistan. Although we were not well prepared in 1962 war against the Chinese yet our army gave a good account of itself in 1965 and inflicted a decisive and crushing defeat on

Pak forces which resulted in liberation of Bangladesh in Dec 1971. These are achievements of the army of which the nation can justifiably feel proud. The army brings out the best from the nation in terms of internal cohesiveness and national integration in the hours of crisis when we are faced with the external aggression. In such situation the army represents the aspiration of the whole nation, to defeat aggressors and save the territorial integrity of the country. We amply proved in 1965 and 1971 in conflicts with Pakistan that our sense of internal cohesiveness and national integration leading to nationalism, and patriotism, asserts itself at a crucial time and that the whole nation rise to a man forgetting all our differences and mutual bickerings making army as the rallying point for the national efforts.

The British wanted to perpetuate their rule in this country and therefore did not want to keep the Indian soldier well informed as this would have run contrary to their interests in this country. They enforced a sense of aloofness among soldiers so that the army could never identify itself with the national aspirations of the people. The recruitment was open only to exclusive groups so called martial races which had been traditionally loyal to the British empire in India. After independence the army was no longer kept aloof and isolated, it identified itself with the aspiration and way of life of the people. The recruitment was thrown open to all shades of populace and areas and it has been proved amply that good soldiers can come from any walk of life and it is no longer a preserve of selected groups or community to monopolise recruitment in the Army. The myth of "Martial Race" as invented by the British to aid the perpetuation of their own rule has been smashed. Thus the Army of today fully represents the aspirations of the people and has attained complete emotional integration with the entire population of the country. This has greatly strengthened the spirit of internal cohesiveness and national integration in the country.

After independence India opted for democracy based on parliamentary system of government. This system of government well nurtured in the beginning attained maturity under able leadership of a great democrat and parliamentarian of the stature of Pt Jawahar Lal Nehru. The army well understood the equation of civil-military relationship in this form of Government and unquestionably recognised the civilian supremacy in the affairs of the state. This relationship between the army and central government was never allowed to be impaired even at the worst of times in this country whether the threat was from within the country or from external forces. This is unique achievement and has contributed in a big way to the political stability which we have acquired after independence. This speaks for the high sense of discipline and dedication

which our army has towards the preservation of democratic form of the government which people of this country have chosen for themselves. This has immensely contributed towards the cause of political stability, internal cohesiveness and national integration in our country. In contrast to this Pakistan could not acquire this political stability as such a commitment from their army to the nation was missing. That country has been in turmoil since independence and armed forces which were at the helms of affairs in 1971 could not save the country from breaking up. An army which kills aspirations of the people rather than identifying itself with the way of and affairs of the nation can never be an effective instrument in saving country from chaos and political turmoil. The Army which rules by inspiring fanaticism and communal hatred invariably contains the seeds of its own destruction.

By the time second world war commenced the youth in this country had been imbued with a sense of nationalism and involved in freedom movement spearheaded by Indian National Congress. These young men were long exposed to nationalist thinking in various universities during the struggle for independence. Many of these young men were commissioned as officers in the Indian Army to fight for British empire in Second World War. They were not happy to see their own country under the subjugation of the British and hence their loyalty to the crown was diluted. Indian soldier too did not remain unaffected by nationalist fervour for freedom. The beginning of Second World War also saw Japanese inflicting defeats on the Western colonialists, which fought in its wake Asian Nationalism. The revolt by the Indian National Army also could not be ignored by the British. Upshot of all this was that the British empire could no longer rely on Indian officers and soldiers to oppress their own country men and they were left with the only choice to grant freedom to India. Thus history bears testimony to the fact that the Indian Army made a silent but singular contribution in making India free.

After independence the Army kept on serving the nation by contributing towards national stability, national integration and national defence. During the bifurcation of the country, the civil administration had almost broken down. The army was used then extensively to maintain law and order and prevent rioters from indulging in harassing and murdering innocent citizens. The army was able to restore law and order and ran refugee camps housing millions of refugees and escorting them safely to their homes. Even since the Army has performed creditably the role of assisting civil Govt in maintaining law and order whenever called upon to do so. The whole nation applauds when it comes to the

rescue of the citizens of this country whenever any natural calamity in the form of floods, cyclones and earthquakes overtakes them. This naturally fosters internal cohesiveness and national integration in this country.

The army has rendered great service to the nation by preserving democratic values in our country. By meticulously avoiding to meddle in politics and serving the government, with professional competence the army has played a very constructive role in preserving democracy.

The partition had left Assam severed from the rest of the country. The army worked untiringly there during heavy monsoon and built embankments and river bunds to lay the 145 miles length railway line in the shortest possible time. In 1971 the Barauni Industrial complex consisting of oil refinery, fertilizer and thermal power plant would not have survived the floods of the Ganges but for the heroic efforts of the Army. The nation still recalls these events with the gratitude and pride in the Army.

CONCLUSION

Our Army has played a very constructive role in fostering internal cohesiveness and national integration in the country. By not meddling in politics it has made a contribution of great significance in preserving democracy in this country. Our's is a national army and represents the aspiration of whole nation. Apart from defending the territorial integrity of the country it is playing a useful role in civil affairs of the country. Army is an organisation of highly trained, well equipped men, which is uniquely placed to play an effective role in a country of such diversity as ours. Its unique position arises from the fact that it is above the boundaries of caste and regionalism which are hurdles to the national integration of India. It is a potent force in giving the nation an identity and a sense of national unity. The traditions of valour and bravery of our army in battlefield are well known and it has earned the respect and love of the nation. The integration between society and a large standing army is a continuous process and there can be no finality with regard to this.

The Defence Line Concept

MAJOR YOGI SAKSENA

VERY often there is a heated discussion in various military forums, regarding the validity of a defence line concept in the era of mechanised warfare. A large number of speakers at such forums vehemently criticize the concept, branding it as outdated and certain to cause defeat of the army adopting it. In brief, the substance of such arguments is that France was beaten because of the Maginot Line and Israel too suffered initial reverses inspite of the Bar Lev Line.

The aim of this article is to examine the extent to which Maginot & Bar Lev Lines were respectively responsible for the defeat of France in 1940 and initial reverses suffered by Israel during the Yom Kippur War.

MAGINOT LINE

Lidell Hart in his book History of the Second World War, published after 25 years of research in 1970, says that, "Battle of France is one of history's most striking examples of the decisive effect of a new idea carried out by a dynamic executant (Guderian)". The idea was that of deep strategic penetration by independent armoured forces—a long range armour thrust to cut off axes of main and routes of withdrawal of the opposing army well behind the front. The idea proved as effective as other novel ideas had proved earlier—from use of the horse, the long spear, the phalanx, the flexible legion, the musket, the gun, the organisation of armies in separate and manoeuvrable divisions.

The idea was incorporated in the bold Manstein Plan which provided the necessary surprise. In this plan, the main German offensive containing bulk of the armour was shifted from tankable Belgium, as in Schlieffen Plan to the 70 miles of supposedly impassable Ardennes ie from a direction where it was most expected by the Allies to where it

was least expected. The strategists had ruled out even a large scale infantry—predominant offensive through the Ardennes, leave alone a tank thrust.

When Germany invaded the West in May 1940, Von Bock's (Commander Army Group B) successes on the right flank in Holland & Belgium in the initial stages diverted the Allies' attention for several days from their main thrust building up in the Ardennes. Furthermore, breakthrough in Belgium by German Sixth Army (part of Army Group B) absorbed the most mobile part of the Allied forces, thus preventing these mechanised formations from being switched south to meet Guderian's (commanding a Corps in Panzer Army Group) powerful armoured forces which crossed the Meuse on 13th May 1940—the fourth day of the offensive. And as the Allied armies rushed deeper into Belgium, they not only lost the chance to contain Guderian but also exposed their rear to Rundstedt's (commander Army Group A) enveloping manoeuvre towards the sea.

German success depended upon whether they could push through the Ardennes and cross the Meuse before the Allies could collect reserves to react. In the event, Guderian was allowed by Kleist (commander Panzer Army Group) to attempt crossing of the Meuse without waiting for the infantry corps to arrive or artillery to build up. The French had expected artillery build up to take five or six days, enough time to allow reinforcement of their positions.

It is important to note that thrust by three German panzer corps under von Kleist (one of which was being led by Guderian) was not made against Maginot Line but beyond the Western end (at Montmedy) of the incomplete Line—the weakest point in French front. The French made another blunder by assigning insufficient, under-equipped and under-trained (reserve) divisions to the area facing Ardennes, which was also the pivot of their own advance into Belgium. These second-rate troops were considered adequate as it was not believed that Germans would advance through the Ardennes. Move forward of the Allied 'Left' swung open the hitherto closed door and hence its ability to withstand enemy onrush depended upon this weakly-held hinge.

Liddel Hart writes, "what proved fatal to the French was not, as is commonly imagined, their defensive attitude or 'Maginot Line complex' but the more offensive side of their plan. By pushing into Belgium with their left shoulder (consisting of three French armies and one

British army—the most modernly equipped and mobile part of the Allied Force as a whole : author), they played into the hands of their enemy and wedged themselves in a trap". Another factor which had been left out of reckoning, according to Liddel Hart, was Guderian, whose panzer corps "pulled the German Army along after them, and thereby produced the most sweeping victory in modern history".

Based on his conversation with Maginot, the French Defence Minister in early Thirties, Mac Arthur has brought out in his Reminiscences that the Maginot Line was constructed in order to enable the French to hold the Vosage's front with a small proportion of their total force thereby leaving ample force to launch a counter attack or turning movement against the German Right. Thus the Maginot Line was built to enable the French to attack, not in pursuance of a policy of a static defence. During the War, however, the French failed to carry out the enveloping manoeuvre or any counter stroke. Liddel Hart says that a counter-stroke against the flank of German advance would probably have paralysed it. To quote MacArthur again, "The Maginot Line came to be the universal symbol of static defence, whereas it was meant to be the pivot of bold offence. History has a strange way, at times, of making white look black".

BAR LEV LINE

Bar Lev Line was a string of infantry held strong points on artificial sand embankment 30 60 ft high, which according to Israelis were "assured of artillery support in two minutes, tank and fighter bomber effort in ten minutes". Israelis never intended Bar Lev Line to hold against heavy attacks by itself but only to hold the enemy right at the frontier (Suez Canal) for sufficient time to allow reinforcements to come up. One of the main purposes of the Line was to house and provide protection to the secret devices which were designed to transform the Canal into a moat of fire. The device was based on spraying of thin film of oil from underground tanks on canal's water surface and igniting it with a thermite bomb to set the canal ablaze as the crossing started.

In the event, the secret devices were sabotaged by the Egyptians on night Oct 5/6 1973 and a well-coordinated defensive action by them managed to prevent arrival of all three supporting arms (artillery, armour and air force) in effective strength. Since the supporting arms came piecemeal, they were often defeated in detail.

It is erroneous to portray Bar Lev Line as a heavily defended limit of penetration, as is often done. In fact, the Line was manned by reservists—mostly middle aged businessmen of 116 Brigade (or Jerusalem Brigade) which had relieved the regular garrison. Fewer than 600 men out of a total of 800 were manning the Line on 6 Oct 73, the rest being on leave. The Bar Lev Line, therefore, should not be considered anything more than a series of Border outposts.

There were two other reasons for the Bar Lev Line to be overwhelmed : surprise and strength of the attacker. As is well known, the Egyptians achieved complete surprise in starting the war as the Israelis assumed the concentration of troops on the far side of the Canal to be for one of the oft-repeated exercises. Furthermore, being the Yom Kippur Day, even the forward troops were at low level of readiness. Egyptians also launched the attack in overwhelming strength. There were four mechanised divisions in the initial wave, 1000 artillery guns along three stretches viz Kantara, Ismailia & South of Bitter Lakes and 55 tank—killers (Anti-tank Rocket Launchers/guns or howitzers/missiles of all types) per km of front in addition to the SAM umbrella.

To compound the advantages the enemy already had, Israelis made the tactical blunder of launching their tanks in company strength “automatically” in counter attack—actions which were pre-programmed for a smaller enemy effort and not the overwhelming force that faced them on the Yom Kippur Day. Egyptian anti-tank defences consisted of Saggers, RPG-7, 82 & 107 mm recoil-less guns, 85 & 100 mm artillery anti-tank guns and 122 mm howitzers in direct firing role. Furthermore, the attacks were not well coordinated with infantry and artillery and air support became impossible because of the SAMs. It also appears that Israeli tanks and artillery guns in support of the Bar Lev Line strong points were dug in very close behind and hence were destroyed by initial waves of assaulting Egyptian infantry.

To a certain extent, the Israeli plans for counter attack by reserves were put out of gear because of the use of mining pumps by Egyptians which considerably reduced the reaction time available to them. These Soviet high-pressure mining pumps made passages through sand embankments on both sides of the Canal in less than half the time required by explosive and bulldozers.

It becomes evident from the above that Israelis suffered initial reverses not as a consequence of Bar Lev Line but because of many

strategical and tactical advantages secured by the Egyptians and errors made by the Israelis.

CONCLUSION

It is clearly perceptible from the foregoing discussion that a defence line is valuable provided the line is held by only a portion of the total force available, leaving sufficient troops for counter penetration (or occupying positions in depth) and counter attack. In the overall perspective, its purpose should be to enable lesser number of troops to hold a front, thereby releasing larger numbers for offensive action. If almost the entire force is used up in holding the defensive line, it will inevitably lead to defeat.

It, therefore, follows that in the absence of a natural defensive line near the nation's frontier, it is advantageous to have an artificial obstacle. The artificial defence line, however, should not become such an obsession that all resources are used up in making it impregnable and factors such as relative—force levels, weapons and offensive action neglected.

Counter Attack Versus Counter Offensive

LIEUT COLONEL N K MAYNE

INTRODUCTION

THE tactical thought of the Indian Army has been influenced by the late Viscount Montgomery to the exclusion of others, despite the fact that we also served under Wavell, Allenby and Slim and fought against generals like Rommel and Kesserling. Despite Montgomery's over-whelming influence, when dealing with a battle based on an obstacle, we forget his obiter dicta on the three stages of a battle i.e. Breakin, dogfight and breakout. Consequently, in our attack concepts we seem to slur over the dogfight portion, but lay great emphasis on its importance in our defensive concepts. Is it that what is sauce for the goose is not so for the gander? However, despite this blindspot, the result of a battle depends upon the outcome of this very dogfight. Therefore, how it is fought is of paramount importance.

The defender's problem always is that an attacker will be able to penetrate a defensive system, no matter how strong, at some place(s). Therefore, the defender's task is to contain this penetration and then to eliminate it. One has also been indoctrinated to accept a notion that an attacker will be unable to exist in a bridge-head across an obstacle system during hours of day light unless he can 'breakout' into the open spaces. Therefore, the acme of all defensive doctrine has been propagated to be—'contain the enemy and "day light" him. Thereafter, he will be so vulnerable during day light hours that you can counterattack him and destroy the penetration'. Very neat, clear cut and easily understandable. However, it seems to me that when battle is joined none of these work; a "day lighted" attacker can and does stay on—he is expected to, if this 'he' is 'you' but is not to be 'permitted' to, when this 'he' is 'he', breakouts rarely if ever take place before, at or even a little after, first light next day; and counter attacks seldom eliminate the penetrations. What has always been the result is a slogging match where in according to military lore, more brutal the battle and more the casualties, more praiseworthy is the performance of the participating units, formations and their Commanders. All this, even when this carnage could have and should have been avoided by better and more imaginative generalship. Whether we should

reward such unthinking brute 'leadership' or punish the butchers is not material to this discussion. What is germane to this article is whether we need to indulge in such mindless slaughter, and if not, how we should set about it. This article will touch upon the following aspects of the conduct of battle :—

- (a) Breakout.
- (b) Liquidation of the attacker's Bridgehead.

DEFENCE ON AN OBSTACLE

A TYPICAL DEFENSIVE LAYOUT

A typical defensive position comprises the following ingredients:—

- (a) A natural or an artificial obstacle or an obstacle system e.g. a river, nullah, ravine, canal, ditch, embankment, bamboo stakes, minefield and so on — these obstacles either by themselves or as an obstacle system comprising one or more of them.
- (b) A deployment of troops so designed as to bring to bear direct and indirect fire of various weapons on the enemy approaching the actual 'area' for the defence of which all this effort is being spent.
- (c) A warning system whereby the fire of all weapons can be brought to bear on the enemy at the appropriate time and place.

In (a) and (b) above, which comes first, the chicken or the egg, can be left to what is called the "situation on the ground". For the purposes of this discussion, suffice it to say that an attacker will have to overcome the early warning and obstacle systems and the troops actually deployed to physically defend the area (holding troops) and to help defend it (Reserves), before he can exploit his local victory. For this, one can take any Scenario which involves a natural and/or artificial obstacle—a canal, ditch-cum-bund, a deep minefield or a river. The most critical activity for the attacker after the establishment of a bridge-head in all these cases is the imperative requirement of having to open an axis or axes of maintenance by breaching and/or bridging the obstacle(s) and all that is implied in terms of effort, time and space. Therefore, the defender's job must be to strangle this life line.

A DITCH CUM-BUND

As an obstacle, a ditch-cum-bund is an advanced version of the plain embankment. The underlying idea is to create a three in-one obstacle, a minefield, followed by a ditch and then an embankment so that an attacker has to undertake a breaching operation, followed by a bridging operation, followed by a dozing operation. Whereas each of these obstacles, per se, can separate the tanks from the infantry, the defensive concept behind the DCB is to over insure this separation for a length of time sufficient to achieve one or more of the following :—

- (a) Attrition on the enemy while he is forcing a passage through the minefield and later when he is in the process of establishing a bridgehead.
- (b) Destruction of the infantry bridgehead based on the Bund before the tanks can join up by halting his advance and later by launching a counter-attack, both these tasks being carried out by two separate sets of mixed armour and infantry forces.
- (c) Repulsing the remainder of the enemy's forces trapped astride the obstacle(s) because of their failure to achieve a breakthrough because of (a) and (b) above.

A TYPICAL CANAL

A canal has some characteristics peculiarly its own due to its construction. Some of these are given below :—

- (a) There are two main types of canals—the main canals and branches; and the distributaries and minors. Main canals and branches are meant to transfer the whole body of water from place A to place B as it is released from the headworks to its place of "duty". The distributaries and minors carry water with a view to discharge it at appropriate places for irrigation purposes.
- (b) Main canals and Branches are generally lined to avoid wastage of water. Distributaries and minors are generally unlined, except where loss of water due to seepage is likely to be very high.
- (c) Unlike a ditch, the body of the canal water usually flows above the surrounding ground level. Thus a breach in the embankment can flood that side of the canal towards which the ground slopes. This can be a double edged weapon depending upon the ground configuration. In any case, one cannot fiddle with the bunds without due caution, e.g. dozing while creating entry and exit routes is likely to produce some startling results.
- (d) Unlike the bund of a DCB, the height of both the bunds of a canal is the same. Even if the home bank is doctored and the height raised, the siting of flat trajectory weapons is affected because the borrow pits and the bund on the enemy side bank provide excellent cover from fire of these weapons.
- (e) Since the water level can be controlled more easily in a canal than in a ditch, the use of boats of FBE bridges can be made quite tricky by manipulating the irrigation locks.
- (f) It is usual to come across a minor or other irrigational channels of the canal system running parallel to and in close proximity of a Branch or a distributary. Since both of these waterways carry water, they act as twin obstacles and pose a major bridging and/or flooding problem. Therefore, the irrigation locks on the canal system assume overwhelming tactical importance to the belligerents and hence it is not as easy to find a suitable yet lightly held area as it is made out to be. A careful look on any plains map will prove the validity of this observation,

(g) Only specially made to order canals follow the dictates of tactical considerations, most only bow to the wishes of the lie of the ground and economics. Therefore, the defender does not rest in any more appreciable peace either.

It will be seen from the above that technically and tactically it is more difficult to tackle a canal system than it is to take on a DCB.

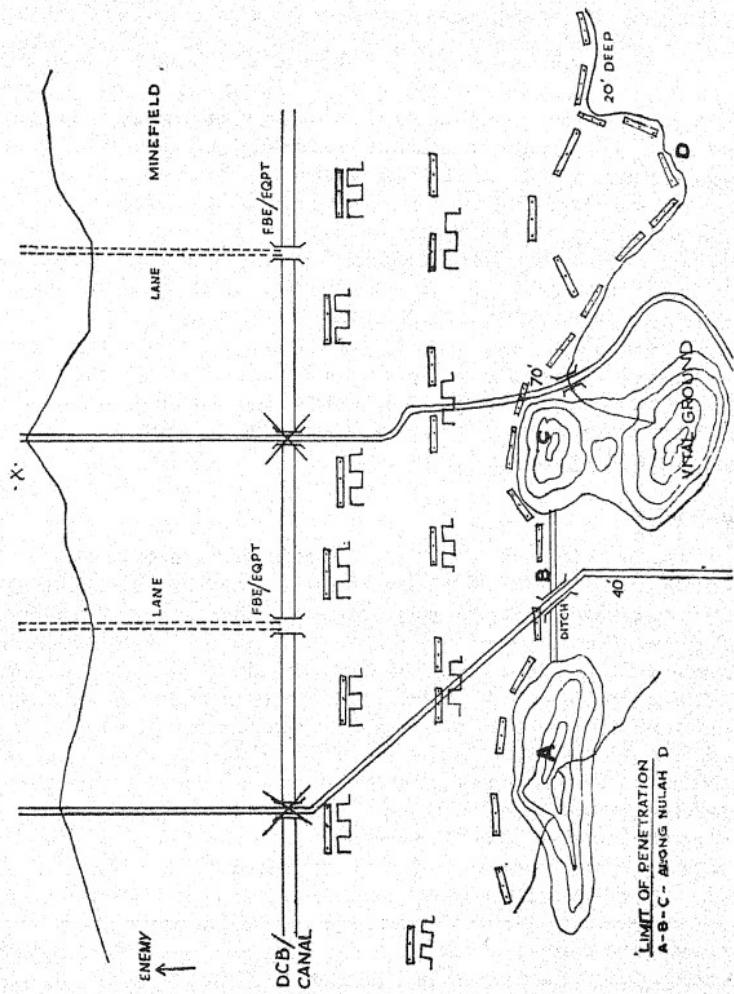
As far as the tactical concepts and the designs of battle, both offensive and defensive are concerned, there is no major difference between a DCB, a canal, a plain embankment, a plain minefield or any other obstacle system comprising one or more of these.

BREAKOUT

BATTLE OF THE BRIDGEHEAD

In order to develop this discussion, let us assume that the attacker has launched an attack across a DCB/Canal/minefield and has succeeded in establishing a bridgehead with infantry. As far as the attacker is concerned, he will now try to breach the obstacle(s) and bring his armour forward into the bridgehead and in order to accommodate it there, he will continue to enlarge his bridgehead. Here it goes without saying that the defender would like to contain this bridgehead to a size unsuitable for the attacker to bring his armour into. If, however, the attacker does manage to bring his armour forward, the defender would aim at luring this armour/infantry force into attacking the defender deployed in his counter penetration positions so as to cause maximum attrition, blunt the attack and finally to halt it. These are the battles of the local reserves followed by the reserves of the formation Commander nominating the limit of penetration. A limit of penetration should be laid down after working out a definite design of battle and visualising the likely course of operations. This is then the line upto which, if it becomes absolutely necessary, a Commander can afford to lose ground (forward of upto or behind the obstacle at any place(s)) and yet, all the while retaining full command over the battle according to the design he has prepared. That is why the limit of penetration must not be glibly defined as the 'line of FDLs' or the 'line of the DCB' or whatever, but should be judiciously selected along a line ahead of or on which the Commander plans to fight the counter penetration battle and win it. The layout of the defences at this stage will be somewhat as shown in the sketch.

So far, so good. From here onwards our concepts advocate that orders be given to evict the enemy from the bridgehead and the counter attack reserve is launched. However, at this stage, the situation is that the attacker has been halted and not liking the situation, it can be



assumed, he will be pumping in more and more troops to defeat the counter penetration position and thereafter to enlarge the bridgehead so as to eventually breakout. Since the defender has been ordered to throw him out, it results in a glorious battle which not only makes a good radio and press release but unfortunately also results in a stalemate.

If the defender were to pause a little and consider the attacker's dilemma, the orders could well be different. For instance, the attacker is pushing in more and more troops; or even if he is not and has been fully contained; he is across a defile or a series of defiles through which all reinforcements must pass and through which he must push more troops into the bridgehead for further operations. Thus the weakest point and hence the vital ground for the defence of the attacker's bridgehead is not the bridgehead itself but it is the defile(s) on the obstacle(s). Therefore, sagacity would counsel a mini counter offensive to seal off the bridgehead at the defile rather than a counter attack on the bridgehead; so as to create a battle of manoeuvre rather than the equivalent of a village fight. Technically what I am calling a mini counter offensive can still be termed a counter attack. However, I have used this phrase to draw the attention of the reader to the more lucrative target provided by the enemy across the obstacle.

BREAKOUT

As regards a "breakout", one expects this term to be used for a force comprising not less than an armoured division and an infantry/mechanised division, breaking out from a bridgehead established by a Corps of at least two infantry divisions and enlarged upto a respectable depth by the mechanised and armoured brigades of this Corps. The defender would have, it is presumed, disposed some reserves in depth i.e. his corps reserve. In practical terms, once the armour moves out of the bridgehead, it would be its task to side step or to over-power the defenders' reserves in depth and to move in deep. On the other hand, the defenders' task would be to use the 'Corps reserves' located in depth to block the passage of the attackers' armour as far forward as possible, certainly closest possible to the by now breached limit of penetration. The armoured formations being pumped in after the establishment of the bridgehead are the attackers' reserves and the depth armoured/infantry formations speeding to the scene of the bridgehead are the defender's reserves. Both the reserves are bound to be those controlled by the highest formation Commanders taking part in the initial battle. Thus the defender might well try and lure the attacker to move out of the bridgehead and launch an attack on to pre-selected and pre-prepared positions for a decisive battle. On the other hand, the attacker could

decide to only creep forward and encourage the defender into launching an attack on to the bridgehead. He could also fake a defeat at the limit of penetration and invite a counter attack. Which of these strategems is used and which succeeds would decide the issue. On the other hand, it could well be the usual straight fight. Success will invariably go to the side which succeeds in drawing the enemy's reserves into attacking a defensive position. The moment the teeth of an adversary are drawn out, winning is only a matter of time. In any case this 'Battle of the Reserves' is crucial and unless it has been fought and won, no deep moves are possible and hence no one is "breaking out"! Every one is only taking part in a dog fight. It must be realised that a "Breakout" can take place only with fresh formations and not by those under the command of the immediate formation commander i.e. in a Corps battle, the Corps reserves is likely to take part in the dog fight till it is won and thereafter it is only the Army reserves which can break out. If we expect or order otherwise, the advance will always bog down at the outer limits of the 'Bridgehead—dog fight' perimeter i.e. 10 to 12 kms. If this template is placed on the history of any campaign, we will find that this dog fight can and does last a number of days. Therefore, it is sheer bravado to teach and/or to expect that a major attack can be launched across an obstacle and that armoured formations can break out the very next day at first light.

LIQUIDATION OF THE ATTACKER'S BRIDGEHEAD

To recapitulate, once counter penetration has been achieved, a stalemate sets in for sometime. The attacker tries to pump in more troops—exploiting his success; and the defender launches his counter attack—exploiting his success! The result is, as it is bound to be, a glorious battle. However, the deployment of troops now assumes a different complexion. In a DCB/canal/embankment configuration, the attacker settles down along the forward slopes of the embankment and uses the exits of the pill boxes and other defence works for sitting his flat trajectory weapons. With this as the base, the bridgehead is defended by the other troops deployed on the perimeter. The important points to note here are as follows :—

- (a) The exits of pill boxes are very narrow openings, some having baffle walls. These openings provide excellent fire positions.
- (b) The weapons are sited so low along the base that even tank fire from any respectable distance is not effective because it cannot hit or effectively neutralise the weapon(s) deployed there or the men operating them.
- (c) The embankment by itself helps the "new defender" by separating the counter attacking infantry from the armour.

(d) The defensive minefield(s) laid by the original defender between the embankment and the depth localities further restrict the movements of the counter attacking troop albeit to pre-planned and rehearsed routes.

(e) Since it is a linear obstacle, the artillery fire of both sides will claim more casualties from the counter attacking troops than from the defender.

Keeping the above points in mind, the following obvious conclusions should be drawn :—

(a) The counter attack is basically an attack on an embankment as it is the base of the bridgehead. The bridgehead cannot be fully eliminated till this embankment is cleared. A little 'give' by the holder of the bridgehead will ensure that the counter attacking force virtually has to become a holding force. This can make reconstitution of reserves by the original defender difficult.

(b) Due to its linear configuration, the assault can be launched by only infantry and that too either frontally or in echelons of sections from either flank.

(c) Tanks cannot be used in assault role from the flank or frontally. Before hackles are raised, please ask yourself, would you 'permit' or even be 'permitted to permit, an assault by tanks if you were the defender? The tanks are required by the original defender to re-occupy the embankment so as to disrupt breaching/bridging efforts of the enemy. However, how can one charge at an enemy by coming at him at great speed and then halt NEXT to him? If one does not halt, one runs the risk of doing a circus act and land straight into the ditch. On the other hand, how can one charge past an enemy, if the attack is from a flank? The problem in both cases is the hand held anti tank weapons located at the embankment, to which there is no answer except an infantry assault.

Therefore, unless we wish to indulge in what the press calls a fierce battle and what historians call carnage, we should only contain this breach in the defences and make the enemy react, by launching a force, from an area under our control, across the obstacle system to—

(a) attack this enemy from the flank(s), destroy the 'population' of various waiting areas under the control of the crossing control and/or seal off the bridgehead so as to trap him in the bridgehead; or

(b) attack him elsewhere, to force him to deal with this threat by—

(i) diverting the troops/pouring into the bridgehead; and/or

(ii) withdrawing the troops from the bridgehead to face this threat.

It would appear that whereas an attacker is able to cross a minefield, a ditch and an embankment, and has been able to establish a

bridgehead, the comparatively easier looking operation of a counter attack seems to be causing more problems to troops whose area it is and who should know the terrain far more intimately than the attacker. This perception needs to be investigated further. The situation is as follows:—

- (a) The defender chose the terrain, constructed the obstacle system and knows the area forward of and behind the obstacle.
- (b) He has no idea where the enemy will attack. Hence his deployment is thin on an obstacle system of superior strength; but not thin enough to provide him very strong reserves !
- (c) The attacker has established a bridgehead in the area(s) of his choice. He is now occupying an embankment and some area ahead of it (the bridgehead).
- (d) For the original attacker and now the defender of the bridgehead, the obstacle is comparatively inferior but is yet enough to separate tanks from the infantry. The old defensive minefield(s) still restrict the movements of the old defender even though the movement permitted is according to his own design of battle.
- (e) The trump cards with the defender of the bridgehead are—
 - (i) he knows where the counter attack will come (the bridgehead) and can easily guess when it will be launched.
 - (ii) he is holding the bridgehead in far greater strength because of (i) above and this not only neutralizes the disadvantage of the inferiority of the obstacle system but places the original defender at a psychological and physical disadvantage.

We are pre-occupied with a fear of loss of territory and this results in a deployment against all tactical wisdom. Loss of territory is only temporary, if it is part of the design of battle. After all, even Hannibal could entice the enemy forward only by giving way at the Centre and could only then annihilate the enemy by sealing off the bulge. If our pre-occupation with a fight to the finish at the FDLs itself were applied to the battle of Canae, one can suppose Hannibal would have been sacked for permitting loss of territory! We are also unduly perturbed about the effect of a retrograde movement on the morale of the troops. The Commanders seem to be uncertain about the reaction and fighting potential of those troops who know that the limit of penetration is behind them or in plain words the dependability of those troops who know that the Commander is willing to lose some territory including the one held by them seems to be estimated as uncertain. The remedy chosen is slogans like, 'No withdrawal', 'last man last round', 'the limit of penetration is the line of the FDLs', and so on. In peace time, all these slogans are duly given the lip service they deserve. No Commander explains to the troops—WHY he wants them to make the supreme sacrifice for a specified piece of ground; and WHY he wishes to fight to the death at that

spot without any manoeuvre. In a defensive battle, well motivated and well led troops will fight for, say X hours or days before excessive casualties make resistance difficult. In such a position, if the resistance is to be of the 'last man last round' variety, the extra time gained can be another 24 to 36 hours only. This time (24 to 36 hours) which the troops will be BUYING for their Commanders with their lives (last man last round) should be utilised well by him—a counter offensive elsewhere, reinforcements being brought up and so on. Otherwise History will not forgive the Commanders. Whenever the need for such a sacrifice has been explained to the troops, they have never let down their Commanders. Similarly, if a design of the battle involving some loss of territory is explained by a Commander to his troops, they will not misunderstand a retrograde movement. It is only the UNEXPECTED and UNEXPLAINED hurried retrograde movement which causes routs, never a DELIBERATE and planned operation.

A temporary loss of ground is not a disaster as long as this loss has been permitted with a view to launching a riposte. Further the deployment of troops is governed by two factors :—

- (a) Intercommunication facilities available for passage of information and orders.
- (b) Type of defences available; their ability to withstand enemy fire power; eventual likely availability of troops to fight after suffering casualties due to bombardments of various types.

As long as a man has to run within a platoon or shout within a section to pass messages or orders our deployment will per-force remain concentrated and hence a good target. That the fire power available is also not being used to the full effect is adding insult to injury. In a linear deployment, we improvise intercommunication and one supposes, not trusting it enough, we do not even spread out enough. As the deployment in the erstwhile field defences and the new permanent defences is more or less the same it is open to question whether we are wasting money or manpower. With the improvement in the survivability factor due to the construction of permanent defences, we could use less manpower and rely more on fire power to hold permanent defences, thereby increasing our capability to launch counter measures by keeping at least half the forces if not more as reserves.

If we adopt a thinner deployment in the FDLs, the attacker will, of course, break through the defences and establish a bridgehead but he cannot run through thereafter. This change in concept would make it essential that we also change our concepts of judgement of performance

of the soldiery. The result of the 'whole battle' must be judged and not of its parts. Obviously a unit holding the area through which a Bridge-head has been established, will have lost ground and appear to have been defeated. However, this unit's performance is not to be rated poor just because this happened. In the overall context, the higher Commander had staked it out as a bait to entice a Tiger and the credit for the 'kill' must go to the whole body of troops taking part in the operation. Thus it would be appropriate to award battle honours to whole formations rather than individual units. The deciding factors should not be merely the casualty rate but the emphasis should be on the acumen shown to achieve the same results. According to the present lore, the Battle of Khanwa might be a battle honour for Rana Sanga's troops but it would at best be only a theatre honour for Babar's troops!

A counter offensive is more likely to be effective than a counter attack. As long as our aim is to evict the enemy—by force-strategem or manoeuvre, we should choose manoeuvre or strategem in preference to force. In our defensive concepts we should divide responsibilities broadly as follows :—

(a) Priority I

- (i) Re-inforcement of threatened localities at unit/brigade level.
- (ii) Counter penetration at divisional level.
- (iii) Counter offensive at Corps and above.

(b) Priority 2-only if an opportunity presents itself

- (i) Local counter attack at unit level.
- (ii) Deliberate counter attack at divisional level with extra reserves allotted from Corps reserves.

The above priorities are a guide. If an opportunity arises, where it is felt that a counter attack would be successful, it is but correct to launch it. To that extent the Commanders must remain on the look out for such opportunities. For the same expenditure in men and material, it will be more cost effective to seal off a bridgehead. The main event of a deliberate nature should be a counter offensive as opposed to the present concept of a re-inforcement/local counter attack at unit/brigade level and BOTH, counter penetration and deliberate counter attack at divisional level. It is suggested that we shift the emphasis in our concepts to the counter offensive from the present one on counter attacks. A counter attack should be relegated to exploitation of opportunity, if it presents itself. If this suggestion is accepted, then the distribution of troops will automatically be as follows :—

(a) Minimum troops to hold ground say a maximum of upto two brigades minus i.e. four to five battalions, because the establishment of a bridgehead by the enemy is not to be treated as a calamity.

(b) A sizeable counter penetration force to be available, say, a brigade plus or a little more and an armoured regiment with the Division Commander.

(c) An armoured brigade and an infantry/mechanised brigade with the Corps Commander for tasks in the following order of priority :—

(i) To launch a mini counter offensive to seal off the bridgehead and/or to destroy the enemy troops and equipment waiting to move into the bridgehead.

(ii) To influence the dog fight if the limit of penetration has been or is likely to be breached.

(iii) To help the Division Commander launch a conventional counter attack on to a bridgehead, but only if a suitable opportunity arises.

(d) An infantry/mechanised division and an armoured division with the army commander as counter offensive reserves to draw the enemy off.

CONCLUSION

If we change the emphasis from counter attacks to counter offensives, mini or major, we can thin down the ground holding troops and create more potent reserves. At present the defences are usually skin deep when deployed in a linear fashion. This change will make the skin thinner but will provide more depth to the defences and have more reserves to enable the commanders to make a proper and effective riposte.

Our defensive and offensive concepts, must have common parameters regarding what can be done and what cannot be done. If our troops are expected to 'break out' on the run, as it were, we must extend the same capability to the enemy in our defensive concepts and deploy accordingly.

It goes without saying that if a concept is changed, we will have to equip the troops suitably and train them accordingly to execute the new concepts—in that order.

To sum up, I recommend the following changes in our tactical concepts :—

(a) Replace counter attacks by counter offensives.

(b) Be more realistic when ordering 'Break outs'.

(c) Remove the 'ban' on temporary loss of ground by a defender and prepare more realistic designs of battle.

Disappearing Professions in India

P C ROY CHAUDHURY

SOME of the old traditional professions in India are on the decline owing to various circumstances and there is little hope of reviving them.

The *Khatmal-khilaos* followed this profession as a side-business. They went round mainly the localities where the Jain Marwaris lived and offered themselves to lie on the bug-infested *charpoys* (bedsteads) for a jolly feed of their blood by the bugs. The Marwaris would not kill any living creature and they would rather see that they live as long as possible. In the early mornings they go round the fields and put sugar and maida to the ant-holes. They used to put the bugs they found into one particular charpoy and this was the bedstead on which the *Khatmalkhilao* had to lie barebody for a stipulated period for the bugs to suck his blood for a fixed sum. This class has almost died out.

So has the professional letter writers that used to sit under a shady tree near the Post Offices. Many coy wives whose husbands had gone away far to earn money and would not write used to approach the letter-writers and produce a piece of paper with the address. Without any lead the letter writer would write out a long loving letter and post it for a few annas as wages. They also used to keep a stock of moneyorder forms for those who wanted to send moneyorders.

The *Bahurupias* were a colorful class by themselves and they also mostly followed this profession as a side-business. The Bahurupiya would approach someone and demand some money and on refusal go into a stipulation that if he was able to deceive the man in some way and make him look very foolish he would be given the sum as a gift. Then some day he would dress as a milkvendor and mimic one and try to sell milk or curd. Another day probably he would appear as a barber and offer to shave the man. Another day he would come as a Pundit who reads the palm. If on any day he is able to sell himself undetected the man would

reveal himself and win the money. In Punjab and Haryana there are some renowned *Bahurupia* families that were given revenue-free lands. They claim they had accompanied Emperor Akbar in a fight against the Pathanas in this area and their work was to amuse the Emperor in spare time.

Decades back the bigger cities like Calcutta, Bombay or Delhi used to have regular early morning street-singers who would sing *bhajans* and entertain. Calcutta, Bombay and such places that had a large affluent christian population used to have carol singers at night-fall in the Christmas week. Horses were common and horse-trainers or *sowars* usually Punjabis did this work. Their smart dress and their horse attracted the boys of the towns. Many of the rich men's sons used to learn riding from these *sowars*. Riding horses has been a casualty and the *sowars* too. The street-singers have also gone into oblivion.

Professional story-tellers and ballad-singers used to come at any odd hours to the towns and villages with their bag of papers and usually a musical instrument. They would take their seat under some shady tree or on the verandah of the village temple and start tuning the musical instrument and immediately a crowd would collect to hear him. It is these ballad-singers or story-tellers that had preserved most of our folktales and folksongs. This class of professionals has also been rapidly declining owing to changes in social habits. Their patrons were normally the big zamindars or the Princely houses. With the decline of the zamindars and the princes the patronage has gone and the professionals have to turn to some other professions for a living.

No Soft Options : The Politico-Military Realities of NATO*

(Review Article)

COLONEL R RAMA RAO (RETD)

IN this compact volume, the author has attempted "to describe why NATO was invented, how it came into being and has developed to the present day and why its future strength and influence must be of over riding importance to its members". He succeeds eminently in describing the origins of NATO and how it has developed over the quarter century and more of its existence, although in discussing the future of NATO, the author as a distinguished senior commander of NATO is understandably circumspect. His other objective of encouraging "the process of shedding light on the facts which really matter in judging NATO and by offering a personal evaluation of most of them", has certainly been achieved. He observes that, "Some of this (ie facts discussed by the author) will not be welcome in various quarters but that is the best reason for setting it all out in the hope of driving home the indelible lesson that soft options will nearly always lead to disaster."

The author has objectively examined the many issues that NATO now faces and has given out his views and analyses not all of which may be in consonance with the views of some members of the alliance. He has not allowed his close association with the alliance over a number of years to colour his perception of the many problems that NATO faces; and his observations are all the more valuable for this reason. This is a useful volume which students of contemporary affairs, and not merely officers of defence services, would do well to study.

NATO came into being because a majority of its twelve original signatories (Britain, France, Belgium, Netherlands, Luxemburg, Canada United States, Denmark, Italy, Iceland, Norway and Portugal) feared if not a direct attack by Russia at least the indirect penetration of West

*No Soft Options: The Politico-Military Realities of NATO by Admiral of the Fleet Sir Peter Hill—Norton, 'Hurst & Co. London, pp. 172, Price £ 5.50.

Europe through communist infiltration and for that reason wanted USA's protection. For its part, USA also feared that at least some countries of war ravaged West Europe could be attracted towards communism, thus enlarging communist (ie Soviet) influence and correspondingly circumscribing American influence in Europe.

NATO objectives as stated in the Treaty document, which has been included as an Appendix, are "to safeguard the freedom, common heritage and civilisation of their people" and to promote the stability of the North Atlantic Area.

The parties to the Treaty "are pledged to resolve international disputes in which they may be involved, by peaceful means and refrain from the threat or use of force in any manner inconsistent with the purposes of UN" (Art 1 of NATO Treaty). In order to preserve the coherence of the Alliance the signatories treat armed attack against one as an attack on all (Art. 5).

A quarter of a century after the birth of the Alliance, heads of NATO Governments, meeting at Brussels in June 1974, re-affirmed the solidarity of the alliance, declaring that it had stood the test of time. They also noted that "the circumstances affecting their common defence, have profoundly changed in the last ten years" since US Soviet strategic equation has reached a position of near equilibrium. In consequence, they concluded that the defence of Europe has assumed a different and more distinct character and that the European members of the alliance must make their contribution to the common defence "at a level capable of deterring and, if necessary, repelling all action directed against the independence and territorial integrity of the members of the Alliance". USA for its part reaffirmed its readiness to stand by its European allies and "to maintain forces in Europe at a level required, to sustain the credibility of the strategy of deterrence, and the capacity to defend the North Atlantic Area should deterrence fail".

However, it is difficult to give an objective definition of deterrence. The author is conscious of this and states frankly that deterrence is a subjective concept, difficult to define. He tries to list the military elements that could help achieving and maintaining deterrence. Briefly stated, this military capability "should be adequate to match aggression extending from bullying and minor harassment, from minor incursions or probes or adventures to limited war by land, sea and air up to what is called 'standing—start blitz' and finally to general war and nuclear exchange." In short, the whole works. Military capability at least

roughly can be quantified; but military capability is not adequate unless backed by political will; which cannot be quantified.

This definition of what can achieve deterrence, however, is not any different from the one adopted by military leaders the world over—a level of military build up having a substantial edge over the capabilities of one's potential adversary; Finally, the author himself has frankly remarked "deterrence is an abstract notion" and "does not lend itself readily to factual argument."

True indeed. Hence the need, in the context of the vast array of nuclear weapons deployed on either side of the 'divide' in Europe for moderation and for positive measures to reduce weapons thereby reducing the damage that war may cause as well as lowering the chances of sparking off an unwanted war.

To Lord Home's Suggestion (former British Prime Minister and foreign secretary) in a lecture at the RUSI in October 1977 that the Allies had reduced expenditure on conventional arms to a point where they were back to the "trip-wire" philosophy, the author quite properly replies that NATO is not in such "desperate straits" and remains strong enough in conventional forces to take care of any possible Soviet incursions.

This brings the discussion to the most serious question of the day and not merely from the points of view of East and West Europe and their Super Power backers, namely, the threat of nuclear war in Europe. The author's views on this subject are no different from those of other NATO and American military leaders; that "trip-wire" and "massive retaliation" doctrines will not do because "both super powers are capable of invulnerable second strike which would totally destroy the capacity of the other to continue the war by any other means"; that strategic nuclear deterrence must remain the West's ultimate sanction in order to safeguard Western interests; but on the way up to that ultimate rung, (which the author mercifully notes it is in the interests of the whole world never to reach) there must be credibility at each of the lower rungs, which NATO calls "flexible response"- This would mean, from the West's point of view having an edge on Warsaw Pact powers at every level from conventional forces (in quality combined with superiority in terms of deployable forces) through the so called tactical nukes, through theatre weapons to the strategic first and second strike weapons of the Super Powers supported by those deployed by Britain and France.

The risk in this posture is obvious—with one side (USA) endeavouring to gain an advantage over the other and the other (Soviets) endeavouring to draw level with its principal antagonist—keeping up the spiralling nuclear arms race.

It is not that the author is not unaware of this grim possibility. He was perhaps inhibited by the high office he was holding from boldly calling a halt to Super Powers arms race which would primarily benefit the two Super Powers as well as Europe. Admiral Hill-Norton correctly notes :

"Let it never be forgotten that nuclear weapons of whatever yield are just that—nuclear weapons. They may be used for inter continental bombardment or in a theatre in a tactical situation: but the essential fact is that they represent a qualitative and quantitative change in the nature of Warfare. They are not simply an extension of conventional weaponry, regardless of their accuracy and yield. So, let us put away once and for all, the thought that the so called "mini-nukes" or weapons the size of a cricket ball are less provocative or diminish the possibility of nuclear escalation, once the threshold is crossed".

The author notes the complexity of the Cruise Missile issue. Where does it fit in the scheme of deterrence? If deterrence fails where does it fit in the war fighting scenario?

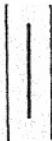
The Cruise Missile issue at one time held up the progress of SALT II talks. The provisional SALT II agreement yet to be ratified by US Senate, limits the deployment of ALCM's (air launched Cruise missile) to those that can be delivered by US B-52s and their replacement aircraft. Despite the means of verification available to both sides it is not clear how either side can prevent the other from developing ship launched as well as land vehicle launched CMs which could supplement theatre nuclear weapons.

It is in this context as well as in the broader context of reducing the dangers of nuclear and even of conventional war in Europe that one would like to have a more extensive discussion on the three Ds of NATO strategy—deterrence, defence and detente. The distinguished admiral has discussed deterrence and defence.

To this reviewer, however, it is clear that in order to secure peace in the Eighties and beyond, detente needs greater emphasis than

deterrence. There are vested interests especially amongst armament interest in USA for emphasising the roles of deterrence and defence. These are ably reinforced by powerful Chinese interests; one of their main objectives seems to be the maintenance of tension between NATO and Warsaw Pact powers. For detente, however, there are few spokesmen outside the economically weak and exploited third world. In fact Europe too would benefit from detente. Should tensions be kept up between the Super Powers and Soviets be compelled to deploy sizeable forces in Europe, China would be free to expand in South East and South Asia at the expense of people of the regions concerned. West Europe too would have to maintain huge forces reducing their capacity to compete with USA and the latter would be free to deploy its conventional forces—the Rapid Deployment Forces in the third world in furtherance of its global interests.

JOIN



UNITED SERVICE INSTITUTION OF INDIA

(Founded : 1870)

For the furtherance of

Interest and Knowledge in the Art, Science and
Literature of the Defence Services

For particulars, write to

Secretary, U.S.I.
'Kashmir House'
Rajaji Marg
New Delhi—110011

BOOK REVIEWS

THE MILITARY BALANCE 1979-80

(Published by International Institute for Strategic Studies, London)
119 pp. Price \$ 5.95.

ANNUAL publications of the International Institute for Strategic Studies, London, have deservedly acquired a reputation for the authenticity of the data they present as well for their comprehensive coverage. Among their standard publications is the Military Balance which provides essential details pertaining to the military establishments of practically all countries of the world. The publication under review was issued in September 1979 and contains data reflecting the position as in July 1979.

The format of previous years has been maintained, reviewing the strength, composition and major items of equipment of armies, navies, and air forces of countries of the two dominant alliance systems as well as of other countries of the world.

As explained by the compilers of the Annual, data pertaining to force strengths, defence expenditure and national income are based as far as possible on official publications of the countries concerned and explanatory notes indicate the year to which they refer. Some countries—especially those with a tradition of authoritarianism, whether of the left or the right—hesitate to disclose force strengths, major items of equipment held, items imported and countries of origin of such equipment, para military forces in being and even details of defence expenditure. In such cases the Institute perforce has to base its data on unofficial information and analyses of experts.

Each Issue of the Military Balance includes a topic or topics of interest to defence specialists the world over. The 1979/80 Issue tabulates the characteristics of helicopters in use in different countries, while the previous issue (1978/79) had presented the characteristics of "offensive support aircraft". Another item of interest included in this year's Annual concerns the arms production capabilities of Third World Countries.

A useful feature introduced sometime ago—namely presentation of identified arms supplies agreements between producer countries and purchasing countries—had been continued in this year's issue also. Another attractive feature is a set of photographs of some major weapon systems introduced into service by leading countries.

One point, however, may be made. It seems to this reviewer that there is a tendency to err on the high side in indicating the size of our

armed forces and the inventories of major items of equipment held by them and to underestimate the force strengths and equipment inventories of Pakistan.

Altogether the publication maintains the usual high standard of this series, which constitute indispensable reference books for defence specialists and servicemen the world over.

RR

DIPLOMATS: THE FOREIGN OFFICE TODAY

by GEOFFREY MOORHOUSE

(Published by Jonathan Cape, London, 1977) 405 pp. Price £ 7.50.

THIS is a delightful book for all alike-students of diplomacy, international affairs and the British beaurocratic system. Geoffrey Moorhouse, probably better known in this country for his multi-dimensional and descriptive book "Calcutta" has ably parlayed his reportorial expertise and wide experience in affairs of the world into writing this very balanced and exhaustive book.

No description of any organisation could hope to be completely comprehensive-and yet when one finishes Moorhouses book one gets a remarkable feeling of having been there and knowing all about it. A praiseworthy achievement considering that the book describes both the historical background as well as the contemporary realities of one of the oldest and most consistently successful foreign offices in the world. Embellished with detailed facts and figures, a large number of tables which cover aspects as varied as the FO hierarchy, diplomatic salaries as well as delegation peases, the author also makes his text eminently readable by quoting from numerous anecdotes and stories which dot and spice each chapter.

A remarkable and wonderful book to read.

S.P.

SPHINX AND COMMISSAR: THE RISE AND FALL OF SOVIET INFLUENCE IN THE ARAB WORLD

by MOHAMED HEIKAL

(Published by William Collins Sons & Co. Ltd., London, 1978) 303 pp.
Price £ 6.95.

IT was commonly said in Cairo at one time that it was easier to meet the President of Egypt than to meet Mohamed Hasnain Heikal, Chief Editor of *Al Ahram*, the leading newspaper of Egypt. This was said

partly in joke but had also an element of truth in it. Because of his close association with the late President Nasser—for a time Heikal was his Minister for Information—and then for some time with President Sadat, Heikal had the opportunity of seeing things at close quarters. He was witness to the developments in Egypt, her emergence as the leading Arab power, the formation of the non-aligned movement by Nehru, Nasser and Tito, the Anglo-French-Israeli invasion of Egypt in 1956, the Six Day War and the Egyptian debacle in 1967, the War of Attrition of 1969, the October War of 1973 and the subsequent developments in which Egypt and the United States drew closer and the Soviet Union, for nearly 20 years Egypt's friend and ally was left out in the cold. Heikal was never as close to President Sadat as he was to President Nasser and it is significant that he was relieved from the post of Chief Editor Al Ahram soon after President Sadat decided that the Soviet Union had no longer a useful role to play in West Asia and that it was not to Moscow but to Washington that he must look for solving the West Asia issue and recovery of the territory occupied by Israel.

Heikal has told the story of the rise and fall of Soviet influence in Egypt and the Arab world with remarkable lucidity and has embellished his account with personal anecdotes about the Soviet leaders which not only amusing but also throw light on the working of the Soviet Government. As an insider he has been able to give an account of many closed door meetings between the Egyptian and the Soviet leaders.

The reasons for the rise of Soviet influence in Egypt, Syria, and Iraq and to some extent in other Arab countries are easy to understand but not the reasons for its fall, unless, of course one accepts Heikal's thesis. In the fifties, the United States was thinking in terms of military blocs and alliances to contain world Communism. Nonalignment was immoral and republican tendencies personified by President Nasser which sought to oust the monarchies which were allies of the United States, dangerous. Naturally therefore Egypt had to turn to the other superpower, the Soviet Union, for economic and military aid. The United States' attitude at the time of the Suez crisis in 1956 brought the United States and the Arabs closer but only for a time. The American commitment to the preservation of Israel whom the Arabs were then determined to destroy was total as became clear during and after the 1967 War. Egypt, Syria and Iraq broke off diplomatic ties with the United States and these were restored only after the 1973 War.

During all these two decades, the Soviet influence increased. The construction of the Aswan High Dam and the supply of arms by the Soviet Union endeared her to Egypt. The rebuilding of Egypt's armed forces almost totally destroyed during the 1967 War was an act for which

President Sadat again and again expressed his gratefulness. It was Soviet missiles—SAM 6 and SAM7- which tilted the balance in favour of the Arabs during the 1973 War as it more than neutralised the advantage that Israel had in the Phantom aircraft and the Patton tank. It is true that the Arabs could not score a resounding win in that War but if Arab pride was assuaged and Arab self-respect restored it was because of the Soviet arms and the rigorous training of Egypt's armed forces by Soviet experts, who at one time were present even at the battalion level.

And yet soon after the 1973 War, it was not the Soviet Union but the United States which emerged as the central figure in West Asia. It was not to Moscow but to Washington that Sadat looked for guidance, it was not Gromyko but Kissinger who occupied the centre of the stage at the Peace Conference in Geneva as it was he who had through his shuttle diplomacy brought about the Ceasefire agreement and the Peace Conference.

If Heikal is to be believed long before the 1973 War, Sadat was veering round to the view that while the Soviet Union could give him arms and economic aid, it was the United States which could give him peace by exerting pressure on Israel. He sees Sadat's decision in 1972 to expel Soviet military experts as a move to reassure the Americans. Once hostilities broke out the two super-powers had almost the same objective. The Americans wanted Israel to be humbled just enough so that she could be pressurised. Washington would not see Israel defeated totally. Similarly, the Soviet Union wanted the Arabs just about to win but not to win actually, so that in the ultimate negotiations it could take the leading part. The wishes of both were fulfilled, the Arabs crossed the Suez Canal but could not force the issue to a successful close; Israel was humiliated by the crossing but managed to get its own back by establishing a pocket inside Egypt. But it was not the Soviet Union but the United States which was at the centre of the stage in the peace negotiations.

Heikal has given some reasons for the Egyptian disenchantment with the Soviet Union. Moscow looked at the West Asia question in the context of its global strategy vis-a-vis the United States. Egypt looked at it from its limited objective of defeating Israel and recovering the lost territories. Moscow was not prepared to give Egypt the heavy artillery, and sophisticated equipment. Above all she was not prepared to give Egypt the M-500 aircraft which Egypt felt was the answer to the Phantoms which Israel had. But these differences, though material, were not the only reason for Egypt turning to the United States. He has put it succinctly 'the Russians could provide the weapons but not the cash, and if, as everyone seemed to be assuming, neither side was going to start the

war again, at any rate in the immediate future, the Russians' usefulness seemed to vanish. Better results for the Arabs... could only be won through diplomacy, and that meant that the Arabs would have to be in a position to influence the only people who could put pressure on Israel—the Americans.'

Heikal has also blamed the Soviet Union for its inability to understand the Arab mind and the Arab ethos. He has paid high tributes to the consummate diplomacy of Henry Kissinger who used the Arabs for eliminating the Arabs from the peace talks. He has also revealed that long before that there had been secret contacts between the CIA and the Egyptians, contacts which were irrespective of the attitude and policy of the State Department. For Indian readers this would doubtless have a familiar ring.

The Do's and Don'ts given by Heikal quoting Nasser for Developing countries in negotiations with the Soviet Government make interesting reading. Some pieces are worth quoting "Go to Moscow with a good stock of anecdotes and folk sayings, negotiate in a language which both sides understand well, do not equate the USSR with the United States and do not talk of *two super-powers*, never try to defend China, they may criticise Stalin but you cannot and be careful in the matter of gifts, never offer them jewels."

All in all, it is a very interesting book for students of West]Asia and of super-powers involvement there. In the concluding pages, Heikal has referred to the inability of Arab governments to find a satisfactory answer to the social problems created by inequitable distribution of wealth. He foresees an explosion in the future because of this and thinks that this might give the USSR the second chance in the region. What it makes of this chance, he says, depends on how well the Soviet Union has learnt from past experience.

J.G.J.

THE ART OF WARFARE IN THE AGE OF NAPOLEON

by GUNTHER E. ROTHENBERG

Published in Canada by Fitzhenry & Whiteside Limited, Don Mills, Ontario, 1978 pp 272. Hard cover. Price £ 7.50 net.

THREE are estimated to be well over 300,000 works on "the Age of Napolean" and Professor Rothenberg has added one more interesting book to the vast number.

The author begins his work with the last years of eighteenth century warfare and surveys events from Valmy 1792 to Waterloo 1815. The book gives details of the tactics employed in various battles;

strategy has been touched upon only lightly. There are also two useful Appendices (Appendix I of selected battles and Appendix II of selected sieges).

Valmy was a "Watershed in the history of war". As Marshal Foch commented in the early part of this century; "The wars of kings were at an end; the wars of the people were beginning."

The list of battles (Appendix I) is impressive. Even from the table Napoleon emerges as the most outstanding practitioner of warfare. He is referred to as 'Bonaparte' up to the battle of Pyramids in 1798 and as 'Napoleon' from 1800 onwards. According to various history books, Napoleon's star was in the ascendant up to 1805, but if the losses of his opponents are to be considered, then it reached its zenith at Borodino in 1812. Though Napoleon did suffer a defeat at Aspern-Essling in 1809 against the Austrians, it was at Leipzig (The Battle of Nations) in 1813 that he had a major reverse. And finally Waterloo which ended Napoleon's military career. His fall was certainly more rapid than his ascent.

But Waterloo was no easy victory. That even the victors suffered from the 'fog of battle' has been clearly brought out by the author. Sir Henry Smith of the Rifle Brigade when ordered to advance by Wellington was compelled to ask "In which direction, my lord?" He (Sir Harry) had completely lost his bearings! Similarly, officers and other ranks such as Captain Mercer and Rifleman Harris never knew what was happening. They were completely enveloped in the smoke created by the guns and firearms. Captain Mercer in his diary says "What was passing to the right and left of us, I knew no more of than the man in the moon."

Discipline in the Napoleonic age was maintained in a variety of ways by different nations. While Napoleon and the Germans opposed corporal punishments and considered them degrading, the Russians and the British resorted to flogging. General Bell of the British army recalled "I have seen men suffer 500 to 700 lashes before being taken down, the blood running down into their shoes and their backs flayed like raw and red-chopped sausages." Russians, too, indulged in corporal punishment; even their officers were caned! Napoleon was opposed to such treatment. He believed that men had to be inspired and not driven to fight. Officers had to lead by example. At the end of a campaign, his officers and men were generously awarded. Decorations were lavish. "With such baubles", he once remarked "men are led." The Hanoverians, too, were opposed to flogging. When a British soldier on detached duty was sentenced to a flogging by his British superiors, the Hanoverian Commander opposed it. He informed the soldier, "we do not flog in my country, so I shall not flog you, it no being the manner of my people. "There is no doubt that

Napoleon, even in this book, emerges as a great practitioner of the principle of 'morale'. Though he never enunciated the principles of war as taught nowadays at military training schools and colleges he, certainly followed them. Time and again he "got there fastest with the mostest" (as an American colleague said), surprising his opponents. Thus he adhered to the principles of 'concentration', 'mobility' and 'surprise'.

Where Napoleon failed was in trying to do too much himself by keeping too centralised a form of control; again though he stated that "an army marches on its stomach", his improvised and ramshackle system of supplies at times produced calamities. Here he broke the principle of 'administration' and his armies suffered accordingly. On the other hand the 'sepoy general' (Wellington) having experience of campaigns in India, observed, "it is very necessary to attend to detail, and to trace a biscuit from London into a man's mouth at the frontier, and to provide for its removal from place to place, by land or by water, or no military operation can be carried on."

The author discusses Napoleon's use of various arms-cavalry, infantry and artillery. As expected since Napoleon was a gunner most details are given about the artillery. He had great faith in the capabilities of this arm. "It is with artillery alone that great battles are won", he is supposed to have told Barnadotte. But yet, according to the author, he "failed to grasp the possibilities of reverse slope fire by howitzers, perhaps a major factor in his defeat at Waterloo." One cannot entirely agree with this statement, particularly the last part. By the time of the battle of Waterloo, Napoleon had lost his speed in action, his charisma was fading and he was outgeneralled by Wellington. Surely he knew from his own study of the art of warfare and of the Prussian Army Instructions, which read "should the enemy be on the reverse slope it will be advantageous to concentrate the howitzers, as a large number of shells thrown on one spot will produce a fearful effect." In his (Napoleon's) 'Notes on Artillery' dictated at St. Helena he said that howitzers were most useful against enemies in entrenched positions. He depended far too much on his genius and in the individual valour of his soldiers and these were perhaps over-estimated towards the end of his military career.

The author clearly brings out how civilian commissioners or deputies were instrumental for making or marring generals. Deputies accompanied the various armies of the frontier and rode besides the generals in battle. Young officers were selected for their valour over the heads of senior and less daring men. Napoleon ('Bonaparte', as he was then known) was one so selected. Eventually, these deputies proved to be

a nuisance and it was on the recommendation of General Bonaparté that they were withdrawn!

What is surprising is that Napoleonic soldiers received little formal instruction. Recruits were normally assigned to their regiments "and departed for the front without more than a week's training." They received uniforms, arms and equipment *en route*, and often drill in the afternoon. Since it took them about fifty to sixty days to march to the front, they arrived in good condition and reasonably well trained. "A soldier is trained after two months' campaigning", said Napoleon. It is no wonder that even nowadays in time of war, and particularly a long war, the training courses at military Academies, Army Training Schools and Regimental Centres are cut short (but not one week) and officers and men despatched to the front immediately after their curtailed training.

Nowadays "maps are the eyes of the army". Napoleon was far ahead of his contemporaries in collecting and keeping maps up to date. As late as the Waterloo campaign, Captain Mercer recalled that his troops had to rely on local guides. On the other hand Napoleon's topographic section was one of his most important assets. Its head, Bacler d'Albe, has been described as "probably the most indispensable of all Napoleon's aides." D'Albe went all out to procure large scale, up-to-date maps. Collections in captured cities were ransacked and officers were sent to purchase maps everywhere. In fact, in 1809, Napoleon established a separate corps of topographical engineers. But despite all this, there never were enough maps which were up-to-date and accurate. Massena was misled by maps which showed the land much lower than it was during the advance into Portugal.

The select bibliography is impressive. There are well over two hundred titles mentioned, which shows the intensive study that the author must have done to produce this interesting work about a charismatic leader and warfare in his age. "Napoleon" as the author says, "will continue to exert a powerful attraction and his achievements will continue to be studied."

J.A.F.D.

KOREAN PHOENIX—A NATION FROM THE ASHES
by MICHAEL KEON

Prentice Hall of India Private Ltd, New Delhi-110001, 1978, 234 pp, Price Rs 25/-

EVEN from ancient times Korea has received the attention of India in cultural and religious matters even though distance precluded intimate social and economic ties. In a way Korea marks the limit of Indian

cultural spread towards the far east, particularly of Buddhism. During our long history, at no point of time there has been any serious political disputes with Korea. Since independence, India has viewed with sympathy and compassion, the spirited efforts made by the Koreans to assert their own freedom. Often, from short term expediences, serious repercussions would arise. The division of Korea to two at the 38th parallel, at the end of the Second World War was one such instance. Regrettably, India was also a party to this, though with all good intentions. Probably this association prompted India to despatch the Custodian Force to Korea and also to take a leading part in the Neutral Nations Repatriation Commission. It is this gallant initiative which finally led to the consummation of the signing of the Armistice. The Indian soldiers have left behind a lot of warmth and goodwill in this hapless land through their gentlemanly behaviour and human conduct. We ought to be proud that since independence Indian blood was let, not for aggressive wars, but in the cause of peace and brotherhood of man.

Michael Keon's book is an unconcealed eulogy of the South Korean President, President Park Chung Hee. It is common knowledge that since the termination of the Second World War, the western media has given preferential attention to certain far eastern countries like Japan, Taiwan and South Korea. Their global strategy coupled with the implacable antagonism between US and USSR, has made the two Koreas literally pawns of sentimentalism and prestige of super-powers. Even after the recognition of Communist China by the US, there is no fundamental change in this policy. The US financial investment and emotional commitment for the building up of President Park is considerable and consistent. It has withstood the vicissitudes of many US Presidents, and since Eisenhower's days they have made it a point to visit S. Korea. But, the patronage of US should not stand in the way of appreciating the great work done by President Park. Even though his achievements are great, and even growing, it is difficult to concede that he is presiding over a truly democratic government. The S. Korean military dictatorship is very much the final arbiter of all matters; in addition, no important decisions are taken without its concurrence. Nevertheless, no one can deny that Park's government is far more sensitive and broad based than what went about as a government under Dr Sygman Rhee. It would be pertinent to recall that the same Dr Sygman Rhee was considered to be one of the most important national leader in Asia by the US in the fifties. In the Korean Phoenix he is cut down to real life size.

The US has underwritten almost wholly S. Korea's military build up. This was done not only to strengthen the bulwarks against communism, but also to withdraw the US forces from S. Korea. However, the latter objective has not yet been fulfilled, and as late as June 79, the US Army Chief of Staff has stated that the N. Korean military is far stronger. It

is difficult to follow this line of reasoning in view of the strong arguments put forward by the author that S. Korea is far superior to N. Korea in all matters after President Park has assumed office. Perhaps both are seeing the issues involved in different perspectives, and have their reasons for their stands.

Apparently, the author is not a subscriber to the dictum that 'A good government is not a substitute for a free government'. Even if we find it possible to agree with the author that the military oligarchy of Park is free from corruption and despotism, can it be truly said that it is a representative government of the people? The author asserts so. If he is right, there should be no doubts in any body's mind that Park has succeeded in eliciting mass support either through his charisma or other means.

A conspicuously luminous achievement of President Park is in the field of heavy and medium sized enterprises. They have become the envy of even Japan, as more and more S. Korean made products, in ever expanding items, find their way to Asian and other markets. By nature Koreans are hard working and simple in personal wants. They are used to the hardships of life and are well disciplined. But the new generation is showing signs of discontent. To the natural assets of Koreans have been superimposed US capital and technological knowhow. Undoubtedly the catalyst was the President himself. The Korean economy cannot be self reliant in international context for self evident reasons. Yet, it remains to be seen as to what extent it will be self supporting and self regenerating, once the US cooperation begins to taper off for any reason.

S. Korea has approximately half a million combat troops. They are well equipped, highly trained and of high motivation. For a proper cause they may be counted to give a very good account of themselves. Strategic surprise is difficult. In the case of a prolonged warfare, outside logistical support would become necessary. The country's armament industry is not known to be adequate either to maintain such a large and complex force, or to modernise it periodically. The dependence on US is practically total in this regard.

It does not need much knowledge or imagination to realize that Korea is one country, and that its division is arbitrary and heartless. Many families have been forced to separate and have become innocent victims and pawns of power politics. All peace loving people would like to see the two Koreas uniting and becoming one, in a spirit of love and compassion. Such a Korea alone can have its rightful place in the comity of nations. Such a unification would need compassion, patience and international leverage. It would not be possible through fear, hate and jingoism. Due to the country's juxtaposition the Koreans have suffered

a lot of misery in the past. To such a vital geo-politiacal factor has now been added the super-power rivalry. North and South Koreas have to realise the basic truth that they will not be able to unite as long as they tow the line of outside powers. They should develop sufficient moral courage to forgive and forget past mistakes and injustices. This, they owe to the future generation. One does not see even dimly the beginnings of such an effort. A Korean Gandhi, or better still a Buddha may yet appear on the scene and help this unfortunate land to overcome its man made tragedy.

Michael Keon's book is quite readable. It contains an array of facts and figures, which make the performance of Park truly impressive. The assessment of a contemporary "strong-man" is always difficult. Ultimately he would be judged in the scales of history. Park and his opposite number Kim il Sung have yet to show the shining inner nature of man, which alone could rise above narrow and petty considerations and take their people to lasting peace and happiness.

T.N.R.N

HIMALAYAN TRADERS: LIFE IN HIGHLAND NEPAL

by CHRISTOPH VON FURER

(Published by John Murray, London, 1975) 316 pp. Price £ 7.50.

PROFESSOR Haimendorf has added one more book, this time a work of anthropological research and travel interest, to his already long list of books.

This book deals mainly with the people of Nepal and the research is over a period of twenty years, starting from 1953, when Nepal opened its frontiers to outsiders.

The first four chapters deal with the Sherpas and are "in some sense" a sequel to the author's earlier book, "The Sherpas of Nepal". The fifth is about Bhotias, the sixth on the Highlanders of the Dhaulagiri Zone, the seventh regarding the Traders of the Karnali Zone and the eighth and last chapter on Trade and Social Relations.

Prior to the Chinese Occupation of Tibet, the Sherpa trade was mainly with Tibet. With the strict control of this trade by the Chinese, there might have been a depopulation in Eastern Nepal. However, with the opening of Nepal to outsiders, who are keen mainly on climbing mountains, trekking and touring, the Sherpas' gains from their trade with Tibet have been replaced by their earnings from mountaineering and tourism. As a result, in some ways the Sherpas have improved their standard of living.

The Bhotias of Western Nepal on the other hand whose mainstay had been the trade in *Tibetan salt* and which had a virtual monopoly in the middle ranges have suffered. The monopoly has been broken by the growth of roads from India to Nepal and the availability of cheap *Indian salt*. The Chinese, too, have imposed restrictions on Trans Himalayan trade. "Older men are very conscious of the changing time and look towards the future with apprehension." Though the scenic value of the Dolpo, Lo and Limi Humla regions of the West is not to be spurned, it is doubtful if tourists and foreigners will frequent these as much as the Eastern regions. Those going towards the west have a very long trek before reaching the scenic regions and high mountains, whereas those going east come to their objectives quickly. Besides, there are more amenities for tourists and foreigners in the east than in the west of Nepal, the Sherpas having been quick to seize the opportunity to cater for visitors.

The author has given a very useful glossary and a select bibliography towards the end of the book. He has travelled widely in the remote regions of Nepal, mentioning the various places and regions visited. There are seven maps in the book—one a general map of Nepal and six others of different regions. Unfortunately, all the places mentioned are not found on any of the maps and a serious student will spend considerable time making a futile search for them (e.g. Tangen, Poyun, Dharapari, Chyaduki to name a few). He should have included a map or maps on an adequate scale to show all the places mentioned in the text.

Another defect is in the spelling of names. For example, Uthu on page 236 appears as Utha in the map on page 224. Similarly, Yalbang in the text on page 241 and elsewhere is spelt Yablang on the map on page 226.

Apart from these minor deficiencies, this is an informative and thorough work on Himalayan Traders and life in the Highlands of Nepal.

J.A.F.D.

INCHON: MACARTHUR'S LAST TRIUMPH

by MICHAEL LANGLEY

(Published by B.T. Batsford Ltd., London, 1979) 208 pp. Price £ 5.95.

INCHON has become a household word in military history, since it was the biggest landing operation since the Second World War, and one of the most daring landing operations in all history. Many also consider it as the world's most outstanding General, Douglas MacArthur's finest campaign. At a time when the North Korean troops had

cornered the U.N. troops in Pusan, the south-eastern corner of South Korea, with the possibility of pushing the latter into the sea, MacArthur took one of the most difficult decisions of his military career. On 15 September 1950, the 70 years old Commander launched his bold amphibious operation at Inchon, 18 miles west of Seoul, the capital of South Korea, then under North Korean occupation.

During the conceiving stage, the operation, code-named *Operation Chromite*, was not acceptable to many of his staff officers and commanders, and he showed his great convincing power to sell this "5,000-to-1 gamble" not only to his commanders but also to the high-ups in the Pentagon and the White House. Gen MacArthur said: "I realise that Inchon is a 5000-to-1 gamble but I am used to taking such odds...." While others thought of withdrawing the UN forces safely, MacArthur courageously set his sights on a greater goal to salvage the reputation of the allied forces, about 140,000, held by about 70,000 enemy troops in the Pusan perimeter, by a surprise amphibious landing at the very door of the enemy citadel. He had made a similar move in 1942, outflanking an entire Japanese Army by leapfrogging 500 miles along the northern coast of New Guinea.

The author says that "never in history has such a localized amphibious landing been supported on such a scale. Unlike the broad sweep of the Normandy beach, Wolmi-do was picked out with a needle of pain." (p. 70). Indeed the fleet that took part in this operation came from 7 countries—USA, Britain, Australia, Canada, New Zealand, France and Holland and numbered 260 vessels (including 37 Japanese manned LST's), carrying nearly 70,000 men.

The author has written an excellent, action-packed narrative of the Inchon Campaign, in which Gen MacArthur's leadership has been portrayed with distinction. The landings and battles of Wolmi-Do, Red Beach, Green Beach, Observatory Hill, Blue Beach, Kimpo Air Field, Yongdungpo and Seoul have been described in details alongwith the recall of the General by President Truman. In a separate chapter Mr. Langley has also analysed the cost of the operation. He has estimated the total casualties of the United States in this particular operation as 3,161 of which 536 were fatal. It is to be noted that the US Marine Corps suffered the most, 422 dead, 2031 wounded, and 6 missing. The X Corps Tactical Air Command flew 2,533 sorties during this operation, at a cost of 11 US aircrafts, all destroyed by enemy ground fire, and the US Marine Air Wing dropped 5,238 bombs and 50,420 pounds of napalm. The US Forces, fired 5,269 naval shells and rockets of 6" calibre or more, 7,117 5" shells 14,526 rockets (mostly 5"), 519 3" shells and 860,047 40-mm, 20-mm and .50-calibre projectiles during this operation,

The author has described MacArthur's self-confidence saying that On D-Day-1, the Commander after regaling his colleagues with memories of old battles, retired for his usual siesta.

Operation Chromite in one way saved the US Navy and the Marine Corps, for like Gen. Bradley considering amphibious operation as a thing of the past, the US secretary of Defence Louis A. Johnson also thought that the Air Force would do anything that the Navy and the Marine Corps could do, and hence, both were irrelevant in the days to come.

About the so-called war-mongering nature of MacArthur, the following words of that great military leader may be quoted in his self defence :—

"It has been said in effect that I was a warmonger. Nothing could be further from the truth. I know war as few other men now living know it, and nothing, to me, is more revolting. I have long advocated its complete abolition, as its very destructiveness on both friend and foe has rendered it useless as a means of settling international disputes...But once war is forced upon us, there is no alternative than to apply every available means to bring it to a swift end...War's very object is victory. There are some, who for varying reasons, would appease Red China. They are blind to history's clear lesson, for that lesson teaches, with unmistakable emphasis, that appeasement only begets new and bloodier wars. It points to no single instance where this end has justified that means, where appeasement has led to more than a sham peace. Like blackmail, violence becomes the only alternative. Why, my soldiers asked me, surrender military advantage to an enemy in the field? I could not answer....."

The book contains 4 maps and 26 operational photographs besides a day-to-day diary of the operation, the Command's structure for the operation, and also a bibliography. This is certainly an excellent addition to the literature on Korean War, and it will, indeed, be read with avid interest by members of the three Services and military historians.

B.C.

DUNKIRK: ANATOMY OF DISASTER

by PATRICK TURNBULL

(Published by B.T. Batsford, London, 1978) 192 pp, Price Rs. 6.95

A description of events that occurred nearly 40 years ago must necessarily rely on many mutually conflicting visions and views. Dunkirk is one of the military epics of modern issues which has had its due share of attention, both from fairly accurate historical reportage as well as fiction and fantasy. Mr. Turnbull writes about the disaster-

turned-epic which befell the BEF in the autumn of 1940 in France from the not too unique position of having been an evacuee at Dunkirk himself. His description of the campaign preceding the evacuation is very readable and offers new light on the personalities and generals and politicians who interacted as the curtain fell. The reader need not necessarily agree with his apologia for Lord Gort, the BEF Commander, whom the author characterises as a maligned individual struggling against forces beyond human control. One need not necessarily agree with Turnbull's francophobic conclusions especially concerning Gamelin, Weygand and the French High Command. However, he does engage even the casual readers attention with his wealth of detail, descriptive as well as anecdotal, which render this addition to the large bibliography on the subject quite worth one's while.

S.P.

THE BATTLE OF TRAFALGAR

by GEOFFREY BENNETT

(Published by BT Batsford Ltd., London, 1977), 256 pp, Price £ 6.25

MANY books and monographs have been written to describe the battle of Trafalgar and the life of Admiral Lord Nelson. For, in Mahan's words: "The coincidence of his death with the moment of completed success has impressed upon that superb battle a stamp of finality, an immortality of fame." The two, Nelson and Trafalgar are seemingly inextricably mixed as would appear from all previous descriptions of either. Geoffrey Bennett however has managed in his admirable description of the battle to sharply delineate the separate and yet interlinked characteristics of both.

Written in the series on major battles and military commanders, Captain Bennett has retold the oft-told tale in a well researched and comprehensive manner. Track charts, tables of comparative forces at sea and extensive footnotes as well as a comprehensive index have been effectively used to provide both, the serious student of naval history as well as the casual reader, interesting fare of a very high order. Most of the descriptions of battle as well as conflicts between personalities have been reproduced by quotations from correspondence, diaries and ship logs. This novel presentation has been most effectively edited and compiled particularly in the chapters describing the actual battle from the moment of Collingwood in the Royal Sovereign breaking the line of the Combined Fleets to the description of Nelson's death and Collingwood's subsequent Trafalgar despatch.

That Trafalgar represented not only Nelson's dying fulfilment of duty but part of the world-wide British struggle against Revolutionary and Napoleonic France is duly described by the author. The naval struggle across the oceans is described as a backdrop for the specific moves leading to the Trafalgar campaign. Included in this description is a discussion of the opposing navies and their supporting systems as well as short, biographical notes on the leading personalities apart from Nelson such as Collingwood, Villeneuve, Gravina, Cornwallis, Barham, Decres and Guanteaume.

Of particular interest to less knowledgeable readers are the chapters entitled 'Fighting Sail' and "Nelson and the French Revolutionary War". The first is a bare bones description of the men and ships of the era of fighting sail. Captain Bennet's lucid description of the muzzle loading gun and its crew, of Captain Hugh Popham's recently introduced signal system (1803) which enabled the transmission of Nelson's "England expects...." signal and also his brilliant summary of the evolution of the tactics as embodied in the Fighting Instructions and their eventual change by men such as Rodney and Nelson-all these are a masterly introduction into the fascinating period of naval warfare in the late 18th and early 19th centuries.

The Chapter on Nelson and the French Revolutionary war provides a biographical sketch of the victor of the battle alongwith illuminating comments on his personality. While this chapter is possibly the one with the least new or previously unpublished material, it provides a very well sketched, out brief on Nelson's biography as a commander at sea. Nelson buffs could however quite easily skip this chapter.

Despite the stamp of finality that Nelson's death imparted to the Battle of Trafalgar in 1805 the British war against France continued till Waterloo in 1814. However, despite the nine long years of further war both at sea and on the continent, Trafalgar seems to provide a watershed mark of that war. That it put paid any notion of a Channel crossing by the French is beyond doubt but it did not stop the war at sea. For all that, it remains the most important sea battle of a war that ended nine years later a war that was decided on due to the influence of sea power. Capt. Geoffrey Bennet quite vividly explains this anachronism as well as all the issues pertaining thereto. An immensely readable and valuable addition to the literature on the influence of sea power in Europe and the World during the wars of the period 1793-1814.

S.P.

Secretary's Notes

ANNUAL SUBSCRIPTION

I would like to thank all those members who paid their membership fee so promptly at the beginning of the year. To those of you who have not yet paid, may I remind you that your membership was due on the 1st January. Would you please, therefore, put a cheque in the post to me TODAY.

LIBRARY

In spite of the increases in postal rates in recent years books are issued to members anywhere in India postage paid one way. We would request the co-operation of borrowers in eliminating avoidable postage by returning books in time without waiting for reminders.

CHANGES OF ADDRESS

Several cases of non receipt of Journals have been reported due to members not informing the Secretary of their changes of address. Members are requested to inform this office promptly whenever there is a change of address.

LETTERS TO THE EDITOR

We wish to develop this feature in the Journal, so if there is any point in its pages on which you feel you would like to send me a letter for publication, do please send it along. It might be a letter of commendation on an article, or you might disagree with the conclusion of a writer. Whatever it is, send in your letter and I will endeavour to get it in. Letters should be as brief as possible and should be sent to the Editor, USI Journal.

Additions to the USI Library

MILITARY HISTORY & MILITARY STUDIES

Author	Title
Richard, Deacon	British Connection : Russia's Manipulator, 1979 (20963)
Robert, Jung	Nuclear State, 1979 (20964)
Sebastain, Haffnex	Meaning of Hitler, 1979 (20965)
William, Napier	History of War in the Peninsula 1979 (20966)
Hart Liddle	History of the 2nd World War, 1971 (20983)
Krishanan, N. Vice-Admiral	No Way but Surrender : An Account of the Indo-Pakistan War in the Bay of Bengal, 1980 (21034).
Maxwell, Leigh	My God : Maiwand, Operations of South Afghanistan Field force 1978-1980, 1979 (21052)
Deighton, Len	Blitzkrieg : From the rise of Hitler to the fall of Dunkirk, 1979 (21057)

AIR FORCE

- Arms and Armour Press
Dean, Sir Maurice
1. Japanese Airforces in World War II, 1979 (21056)
 2. The Royal Air Force and Two World Wars, 1979 (20942)

BIOGRAPHIES AND MEMOIRS

Wilson, Dick	Mao : The People's Emperor, 1979 (20968)
Lang, Jacken Von	Bormann : The Man who manipulated Hitler, 1979 (20970)
Colby, William	Honourable Men : My Life in C.I.A., 1978 (20973)
Hastings, Max	Yoni, Hero of Entebbe, 1979 (20982)

Author	Title
MacArthur, Douglas	Reminiscences of Douglas MacArthurs 1979 (20999)
Pool, James and Pool, Suzanne	Who financed Hitler ; The Secret Funding of Hitler's Rise to Power 1919-1933, 1978 (21053)
WARS AND CAMPAIGNS	
Langford, David	War in 2080 : Future of Military Technology, 1979 (20975)

INTERNATIONAL AFFAIRS	
Kaul, T.N.	Kissinger Years : Indo-American Relations, 1980 (21033)
Nagai, Yonosuke and Iriue, Akira	Origins of the Cold War in Asia, 1977 (21048)

REGIONAL STUDIES

Fallick, Roy	Suez : The Double War, 1979 (20955)
Maikap, SC	Cadet Corps in India : Its Evolution and Impact, 1979 (20967)
Herbert, Goldpawar	Soviet Soldier ; Soviet Military Management 1975 (20969)
US Defence Intelligence Agency :	Chinese Armed Forces today ; Handbook of China's Army, Navy and Air Force 1979 (20971)
Gordon, L.L.	British Battles and Medals, 1979 (20976)
Margiotta, Franklin D	Changing World of the American Military 1978 (20980)
Spielmann, Karl F	Analyzing Soviet Strategic Arms Decision, 1978 (20984)
Sinha, Shyam Narain	Rani Lakshmi Bai of Jhansi, 1980 (20985)
Gopal, S, Ed.	Selected Works of Jawaharlal Nehru, 1979, Vol. 12 (20986)
Moharir, V.J.	History of the Army Service Corps 1939-1946, Vol 4, 1979 (20987)
Lala Lajpat Rai	Shivaji : The Great Patriot, 1980 (20988)
Penderel, Moon Ed.	Transfer of Power 1942-47, Vol 8, 1979 (20990)
Dr Pant, G.N.	Indian Arms and Armour Vol II, 1980

Author	Title
Kausar, Kabir	Secret Correspondence of Tipu Sultan, 1980 (21035)
Graham, Robert	Iran—The Illusion of Power, 1978 (21050)
Rashid, Haroun Ed.	Geography of Bangladesh, 1977 (21051)
Schofield, Victoria	Bhutto : Trial and Execution, 1979 (21055)
Rado, Sandor	Godename DORA ; A Book of Soviet Intelligence, 1977 (20931)

REFERENCE WORKS

Department of Science & Technology	National Atlas of India, 2 Vols. (20958-59)
Allen, BC and Gait, EA and others	Gazetteer of Bengal and North East India, 1979 (20974)
Kaul, Ravi	Chanakya Defence Annual, 1979 (20978)

MISCELLANEOUS

Dupoy, TN Col.	Numbers Predictions and War : 1979 (20953)
Colton, Timothy J.	Commissars, Commanders, and Civilian Authority : The Structure of Soviet Military Politics, 1979 (20954)
Dr S S. Shashi	Uniform to Civvies, 1979 (A guide to re-settlement for Armed Forces) (20977)
Albrecht, Ulrich and others	Short Research Guide on Arms and Armed Forces, 1978 (21049)
Lider, Julian	The Political and Military Laws of War, 1979 (21054).

WITH
COMPLIMENTS
FROM

**Canteen Stores Department
'ADELPHI'**

119, Maharshi Karve Road

BOMBAY-400020

* * *

IN SILENT SERVICE OF FORCES

WE BUY THE BEST AND SELL THE CHEAPEST
TO ONE AND ALL

* * *

WE ADVERTISE ONLY TO SERVE



India's Foremost Shipping Line

Serves India's sea borne trade by operating a diversified fleet of 144 vessels of over 4.84 million DWT

Cargo Liner Services:

**CONTAINER SERVICES to
Australia, Japan, U.S.A.,
Canada, U.K.-Continent,
and U.S.S.R.**

**CONVENTIONAL BREAK-BULK
CARGO SERVICES to
New Zealand, East Africa,
Mauritius, Mediterranean
ports**

Passenger Services to:

**Malaysia, Singapore and
Sri Lanka**

**Also from Mainland to
Andaman-Nicobar Islands
and Lakshadweep**

**Bulk Carrier, Combination
Carrier and Tanker Services:**

On charter world-wide

The Shipping Corporation Of India Ltd.

Shipping House, 245 Madame Cama Road, Bombay-400 021
Phone: 232666, Telex: 011-2314/2371/2766, Cable: SHIPINDIA.

*Offices at Calcutta, New Delhi, Mombasa and London
Agents at principal ports of the world.*

**ON DUTY
OR
OFF DUTY**

We take good care of the Jawans at

P N B

Our brave jawans serve the country, sacrificing their yesterdays for our peace today. We, at PNB, protect their present and future interests. Our many schemes are designed to render utmost assistance and security to them.

Saving Schemes to suit every need

- * House Building Loan Schemes
- * Educational Loans for children
- * Loans for housewives
- * Pension collection facilities for retired personnel
- * Loans for resettlement of ex-servicemen
- * And many other free services

For further details please contact our nearest branch



punjab national bank

(A Government of India Undertaking)

.....the name you can bank upon !